URS

September 20, 2012

J. Lucas Berresford
SC DHEC
State Remediation Section
Bureau of Land and Waste Management
Columbia, SC 29201

Re: Philip Services Site – Preliminary Design Investigation Work Plan
Former PSC Site – Rock Hill, SC

Dear Lucas:

Per our previous communications, the PRP Group is interested in gaining access to the former PSC Site (the Site) for the purpose of conducting the Preliminary Design Investigation (PDI) as described in the attached Work Plan. We have devised an efficient and dynamic plan to fill data gaps and to gather additional data necessary to further, and more accurately, delineate the extent of impacts as related to design of an appropriate remedial implementation approach.

While the majority of the PDI will focus on collecting the data necessary to properly design the thermal treatment system for the source area, we also plan to collect additional samples to address outstanding data gaps and obtain a more complete understanding of the conceptual site model(i.e. burn pit area, aquifer testing, groundwater, surface water).

Please feel free to contact me with any questions. Thank you for your continued help in this matter.

Best Regards,

URS Corporation

A. Brett Berra

A. Brett Berra, PE
Senior Project Manager

cc: PRP Group Steering Committee
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Preliminary Design Investigation Work Plan

September 2012

Former Phillip Services Corporation Site
Rock Hill, South Carolina

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LIST OF ACRONYMS

AOC	Area of Concern
APT	Aquifer Performance Test
BTEX	Benzene, Toluene, Ethylbenzene and Total Xylenes
CB	Chlorinated Benzenes
CEE	Chlorinated Ethenes and Ethanes
COCs	Constituents of Concern
CSM	Conceptual Site Model
DPT	Direct Push Technology
DQO	Data Quality Objective
EPA	United States Environmental Protection Agency
FID	Flame Ionization Detector
FS	Feasibility Study
GPM	Gallons per Minute
IDW	Investigation-Derived Waste
LIF	Laser Induced Fluorescence
MCL	Maximum Contaminant Level
OVA	Organic Vapor Analyzer
PDBS	Passive Diffusive Bag Samplers
PDI	Preliminary Design Investigation
PID	Photoionization Detector
PRG	Preliminary Remediation Goals
PWR	Partially Weathered Rock
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RI	Remedial Investigation
SCDHEC	South Carolina Department of Health and Environmental Control
SOP	Standard Operating Procedure
SSL	Site Specific Level
SWMU	Solid Waste Management Units
SVE	Soil Vapor Extraction

LIST OF ACRONYMS (Continued)

T	Transmissivity
µg/l	Micrograms per liter
URS	URS Corporation
USCS	Unified Soil Classification System
VOCs	Volatile Organic Compounds
YSI	Yellow Springs Instruments

1.0 INTRODUCTION

1.1 PROJECT BACKGROUND AND SITE LOCATION

The PSC Site in Rock Hill, South Carolina is a former Resource Conservation and Recovery Act (RCRA) hazardous waste treatment, storage, and disposal facility. Operations began at the site in 1966 and continued until the bankruptcy of PSC in December 2003, at which time the South Carolina Department of Health and Environmental Control (SC DHEC) assumed the environmental management responsibilities of the site. Several previous investigations at the site have identified chemical releases to soil and groundwater, and some remediation has been performed. Current remediation consists of groundwater extraction through three vertical and one horizontal extraction well, treatment using liquid phase carbon and discharge to the local sanitary sewer.

The PSC site is located at 2324 Vernsdale Road, approximately 4.5 miles southwest of the City of Rock Hill in South Carolina. Robertson Road borders the industrial portion of the property to the northeast, and the Norfolk Southern Railroad forms the northwestern boundary. Wildcat and Fishing Creeks border the industrial property on the southeast and southwest, respectively. The site consists of approximately 44.5 acres of industrial property on the west side of Wildcat Creek and approximately 108 acres of undeveloped woodland on the east side of Wildcat Creek. **Figure 1** presents a location map and **Figure 2** presents a current site plan.

The Site consists of several buildings as shown on **Figure 2**. The former industrial portion of the property is secured by fencing west of Wildcat Creek, with gates located at Robertson Road, Vernsdale Road and west of Wildcat Creek. Two surface water features are located adjacent to the Site and identified on **Figure 2**. Fishing Creek flows from the northwest to the south and demarcates the southern boundary of the site. Wildcat Creek flows from the north to south and converges with Fishing Creek along the southern boundary of the Site. Wildcat Creek demarcates the eastern boundary of the operations area of the former facility. As documented in the RI most surface water drainage from the operations area of the former facility is directed to the east into Wildcat Creek through several stormwater outfalls. One stormwater outfall also directs surface runoff from the southwest corner of the former operations area to Fishing Creek (CDM, 2008).

1.2 POTENTIAL SOURCE AREAS

Information regarding site history and potential source areas has been compiled from previous reports including the Remedial Investigation (CDM, 2008). Four solid waste management units (SWMUs) and several Areas of Concern (AOCs) were identified during the RCRA Part B Permit

Corrective Action process at the PSC Site. The SWMUs and AOCs with a brief description are listed below.

- Incinerator Building Sump (SWMU 8): contained incinerator ash and water from the incinerator water seals. The incinerator was operated from 1981 to 1995.
- Container Storage Area (SWMU 11): large drum storage area on ground surface containing drums of spent halogenated and non-halogenated solvents. This location was used for container storage from pre-1983 until 1995.
- Truck Washing Station and Sump (SWMU 19): wastes managed included wash water, residues, and soil from trucks carrying spent halogenated and non-halogenated solvents. The truck washing station sump was operated from 1981 until 1995.
- Burn Pits (SWMU 41): previous disposal area of solvent distillation still bottoms by open pit burning. The burn pits were operated approximately between 1966 and the early 1970s. Impacted soil, drums, and waste material were excavated in this area to a depth of 8 feet in 1985 under supervision of SC DHEC.
- Solvent Ditch Area of Concern: spill and leakage from tank trucks and the tank farm migrated to this area via storm water runoff. This ditch was operated from the 1960s until 1983. Soil excavation was performed to remove visibly impacted material in 1983.
- Fuel Oil Area of Concern: suspected diesel fuel leaks from underground piping associated with three underground storage tanks and from diesel fuel delivery piping to the incinerator.
- Drum Repacking Area Fire Area of Concern: this building housed spent halogenated and non-halogenated solvents in lab pack form and drums of solids and sludge from spent solvents. The building was destroyed by fire in 1995 and rebuilt the same year.
- Blend Tank Overflow Area of Concern: tank farm where liquids containing spent halogenated and non-halogenated solvents were blended for incineration prior to 1995.
- Scrubber Containment Overflow Area of Concern: wastes managed at this location included caustic solutions of scrubber water with particulate matter from incineration.
- Boiler Explosion Area of Concern: the boiler was used as a backup steam supply for the scrubber and was replaced after it exploded in March 1991. No wastes were managed here but approximately 50 gallons of diesel fuel would have exploded with this boiler.

- Stormwater Outflows Areas of Concern: collection and outflow areas for stormwater runoff from the site and treatment, storage and disposal areas.

The SWMUs and AOCs are described further in the RFI Part I Report. The FS Report describes additional areas of concern including the Stablex Materials Area, other drum storage and management areas, and a stormwater pond.

The RI activities at the site included sampling of various environmental media to determine the nature and extent of impacts. This included the sampling of soil, groundwater, surface water and sediment. The sampling results for soil and groundwater, as compiled from the Remedial Investigation Report and Feasibility Study Report (CDM, 2008; CDM, 2011, respectively), are summarized in **Tables 1** and **2**.

Based on a review of the assessment data generated to date, three classes of VOCs and their associated degradation products have been identified in both soil and groundwater site wide. Although other compounds have been detected at the site, the constituents listed below are considered drivers in respect to constituent distribution and magnitude in both soil and groundwater.

- **BTEX –** Benzene, toluene, ethylbenzene, and xylenes.
- **Chlorinated ethenes and ethanes (CEE) –** Chloroethane; 1,1-dichloroethane; 1,2-dichloroethane; 1,1-dichlorothenene; cis-1,2-dichloroethene; 1,1,2,2-tetrachloroethane; tetrachloroethene; 1,1,1-trichloroethane; trichloroethene; 1,1,2-trichloroethane; and vinyl chloride.
- **Chlorinated benzene (CB) –** Chlorobenzene; 1,2,-dichlorobenzene; 1,3-dichlorobenzene; 1,4-dichlorobenzene; 1,2,3-trichlorobenzene; and 1,2,4-trichlorobenzene.

1.2.1 Soil

As documented in the RI Report and in accordance with SC DHEC guidance, existing soil quality data generated at the site was compared with EPA Region 9 Preliminary Remedial Goals (PRGs) for industrial soil and/or EPA Region 9 Soil Screening Levels (SSLs) with a dilution attenuation factor (DAF) of 20, as developed by SC DHEC. Surface soil (0-1 feet below ground surface) sampling results revealed concentrations exceeding the EPA Region 9 PRGs for industrial soil and/or EPA Region 9 SSLs for all three of the VOC classes identified above. The highest concentrations of these compounds in surface soil were primarily limited to four areas of the site: (1) North Drum Storage Area, (2) Solvent Ditch Area, (3) Incinerator/Drum Repacking Area and (4) South Drum Storage Area (**Figure 3**).

Within these areas, the Incinerator Area had the highest concentrations of all three classes of compounds. The South Drum Storage Area had the lowest average concentrations in surface soils. Subsurface soil sampling results revealed that concentrations also exceed industrial soil PRGs and/or SSLs in the subsurface of these four identified areas. **Table 1** presents the soil sample results from the RI.

1.2.2 Groundwater

Based on a review of the groundwater constituent isoconcentration contour maps prepared as part of the RI, four groundwater areas (GW Areas) of concern were identified. These groundwater areas of concern are consistent in location with the observed soil areas of concern. Specifically, in the areas where the highest concentrations of VOCs in soil have been, detected, the groundwater concentrations are likewise comparably high. Two additional areas of concern exist for groundwater where soil is not suspected to be significantly impacted: (1) the former Burn Pit Area; and, (2) the Fuel Oil Area. Existing soil quality data in these areas may not indicate soil concentrations as high as groundwater in these areas because soil excavation was previously performed in the burn pit area and because the fuel oil product was from a UST leak instead of a surficial spill. **Table 2** provides historical groundwater COC results.

Figures 4 through **6** indicate the extent of groundwater COCs in respect to the three classes (BTEX, CEE and CB). Regolith groundwater concentrations are highest in the Solvent Area for BTEX and CEE as shown in **Figure 7**. Concentrations are above EPA maximum contamination levels (MCLs) throughout a large part of the site from the warehouse building to the downgradient area approaching Wildcat Creek. No groundwater COCs have been detected in regolith groundwater samples collected on the east side of Wildcat creek. CB concentrations are highest in the Incinerator Area, and the CB plume is not as large as the plumes associated with BTEX or CEE.

Bedrock groundwater concentrations for BTEX, CEE and CB are greatest in the Solvent Ditch Area, but the plume size is smaller than in the regolith as illustrated in **Figures 8** through **11**. Elevated CEE concentrations are present in the Burn Pit area. Detectable concentrations of CEE appear in bedrock from approximately the western boundary of the site to Wildcat Creek, and concentrations were detected above MCLs in one well across the creek.

Groundwater impacts and resulting concentration plumes are likely to have originated from the primary areas of concern identified for soil such as the Solvent Ditch area, Drum Management Area, Incinerator Area, North Drum Storage Area (although co-mingled with the Solvent Ditch area), Burn Pit Area, and Fuel Oil Area. The only soil area of concern that does not correspond to elevated concentrations in groundwater is the South Drum Storage Area.

1.2.3 Surface Water

The RI did not include surface water sampling because an extensive surface water investigation was previously completed at the site in 2004 by CDM and SCDHEC and revealed low-level concentrations of metals similar to background surface water concentrations of metals. That investigation also included onsite screening of vapor diffusion modules deployed along the banks of Fishing and Wildcat Creeks using a portable gas chromatograph. Limited impacts were observed in the onsite screening and no organics were detected in the laboratory surface water samples. Additional details can be found in the *Summary Report – Initial Site Investigation* (CDM, 2004).

1.3 GEOLOGIC/HYDROGEOLOGICAL CONDITIONS

1.3.1 Geology

The PSC Site is located in the Piedmont Physiographic Province of South Carolina. This province is characterized by gently rolling hills and ridges intersected by stream and river valleys. Within the vicinity of the Site, land surface elevations range from about 650 feet east of the Site down to about 480 feet at Fishing Creek south of the site. Elevations on the site average from about 510 feet to 530 feet.

The geology of the Piedmont physiographic Province includes crystalline bedrock of metamorphic and igneous origin. The metamorphic rocks range from coarsely crystalline, weather-resistant gneiss to easily weathered mica schist and phyllite. Igneous rock, referred to as gabbro, exists beneath the Site. Gabbro is a crystalline rock that is dark in color and contains minerals that are moderately susceptible to weathering processes. It is probable that this gabbro has been subjected to some degree of metamorphism and may be more appropriately classified as a meta-gabbro. Although the mineral composition may not be significantly altered by the regional metamorphism, it could have imparted structural changes in the rock such as the development of regional fracture systems. If regional metamorphism has not affected the rock, stress-relief fractures are expected in this unaltered rock type.

Monitoring well installation logs have been used to develop the current understanding of Site geology. Existing monitoring well locations are shown on the sealed survey map created by GEL Engineering, Inc. (**Figure 12**) and well construction details are provided in **Table 3** as presented previously by CDM in the RI (CDM, 2008). As described by CDM, the wells are in one of three geologic zones: regolith, transition zone (PWR), and bedrock.

The regolith zone at the Site consists primarily of saprolite, the unconsolidated weathering product of the underlying parent rock that retains the relic structure of the parent rock. The regolith zone also includes the recent stream alluvium deposits associated with Fishing Creek and Wildcat Creek. The regolith thickness at the site ranges from 15 feet to 50 feet. The saprolite and the alluvium are fully connected hydraulically and behave as a single groundwater zone. However, the permeability of the alluvium (primarily sand and gravel with silt) is higher than the permeability of the saprolite (primarily silt with a lower percentage of sand and clay sized material). The depth to groundwater in the regolith measured at the site ranges from 6 feet near the streams to 24 feet at higher elevations as measured during the RI.

The transition zone between the regolith and bedrock zones consists of partially weathered bedrock and primarily of rock fragments, boulder-size rocks, and fractured bedrock that is in full hydraulic connection with the overlying regolith zone. The configuration of the transition zone is highly variable, as indicated in the cross sections provided in the RI (**Appendix A**).

The bedrock beneath the site is primarily gabbro and the majority of groundwater within the bedrock occurs within fractures developed in the rock. Limited groundwater resides within pore space in the gabbro and this is considered insignificant in respect to groundwater plume migration. However, any constituent concentrations residing in the pore space of the bedrock can slowly be released into fractures, resulting in low concentrations of site-related constituents in groundwater migrating through the fractures for an indeterminate period of time.

1.3.2 Hydrogeology

The regional nomenclature applied to aquifer systems in the Piedmont Physiographic Province is to classify the system as the Piedmont Aquifer regardless of the depth zone. Groundwater in the Piedmont Aquifer systems typically occurs in three zones of interest. In descending order, these zones include the regolith zone, the transition zone between bedrock and the regolith, and the bedrock zone. These zones are discussed above along with site-specific details reported during the RI. In addition, the regolith and transition zones are believed to be within the same hydrogeologic zone (i.e., in full hydraulic connection), and these two zones are referred to collectively as the shallow zone (CDM, 2008). The bedrock zone is comprised of interconnected water-bearing fractures in the competent bedrock that occur in this zone, referred to as the deep zone. A layer of unfractured bedrock sometimes exists between shallow zone and deep groundwater systems, resulting in confined and sometimes artesian conditions in the deep groundwater system.

Potentiometric surface maps were developed for the regolith and bedrock hydrogeologic zones from data collected during the RI activities in September 2007. The regolith and bedrock potentiometric surfaces are shown on **Figure 12** and **13**, respectively. The associated groundwater elevations are also summarized in **Table 4**.

1.3.3 Groundwater Occurrence

Consistent with the typical groundwater systems of the Piedmont described above, the water bearing units at the Site form a shallow groundwater system that includes regolith and transition zone, and the deeper groundwater system that includes the underlying fractured bedrock which generally becomes more competent and less fractured with depth. The vast majority of monitoring wells are screened in the geologic units that comprise the shallow groundwater system (regolith and transition zone). The majority of the other wells are screened within the uppermost fractures located within competent bedrock. However, a few monitoring wells penetrate over 50 feet into the bedrock and possibly intercept deeper fractures.

Groundwater is present in the intergranular pore spaces of the regolith and weathered rock and in the fractures and other “secondary porosity” features of the bedrock. The regolith and transition zone is typically characterized by high primary porosity but low effective (interconnected) porosity, low to moderate permeability, and acts as a storage reservoir for downward infiltrating precipitation. Fractures within the underlying bedrock act both as a secondary groundwater reservoir and as relatively higher permeability conduits for groundwater flow within the bedrock.

Groundwater generally occurs at depths ranging from less than 6 ft bgs to 24 ft bgs. Groundwater elevations are summarized in **Table 4** for monitoring wells as measured in September 2007 during the RI.

1.3.4 Groundwater Flow

Since the alluvium is more permeable than the saprolite, and likely more permeable than the transition zone and bedrock, this feature exerts a high degree of control over the site groundwater flow regime. In general, groundwater migrates into the alluvium from saprolite, the transition zone, and bedrock from the western portion of the site. Groundwater in the alluvium ultimately discharges to Wildcat Creek.

Based on the water table surface and bedrock surface mapping, and the results of the aquifer performance testing conducted during the RI, it is probable that the majority of groundwater being collected by the existing extraction wells is derived from both the alluvium and saprolite. Groundwater flow from the alluvium and into the saprolite likely occurs in response to pumping from the saprolite.

Groundwater flow in the transition zone follows similar patterns to the regolith zone due to the high degree of interconnectivity. However, because the groundwater flow is more through weathered rock features and less through primary porosity, slight variations in flow may occur due to preferential flow conduits or areas of flow impedance. Some quantity of groundwater in the transition zone migrates downward to recharge the bedrock aquifer. Lateral groundwater flow in the transition zone is toward discharge points such as streams. Groundwater in the transition zone may migrate in the downstream direction of stream flow before the vertical gradient effectively causes it to discharge.

Groundwater migration in the bedrock follows the same general rules as the other two zones and migrates from topographic high areas of recharge to topographic low areas of discharge such as streams. However, features of a more regional scale, such as major drainage basin divides and rivers, rather than features of a site-specific scale, such as Wildcat Creek, may influence groundwater flow patterns in deep bedrock. Furthermore, the groundwater flow paths of least resistance in the bedrock zone are along fractures.

Figures 12 and **13** shows the potentiometric surfaces from the September 2007 groundwater elevation measurements collected during the RI. The depth to groundwater data was collected following a temporary shutdown of the extraction system even though it was concluded in the RI that equilibrium had not been reached in the regolith based on the variations in groundwater levels between MW-119/RIPZ-3 and MW-113A and MW-114. However, as presented in the RI, it is believed there is higher transmissivity in this area compared to the rest of the Site as indicated by the lower hydraulic gradient. Bedrock elevations show a similar pattern to regolith, with groundwater elevations relatively flat between MW-110B, MW-113B and MW-120B (CDM, 2008).

1.3.5 Hydraulic Properties

As presented in the RI, two methods were used to estimate the groundwater flux passing downgradient of the Site under natural conditions. The first method applied was based on the annual precipitation infiltration rate within the site groundwater basin. The second method was based on calculations using hydrogeologic data collected during the RI.

The infiltration rates for the covered and uncovered areas were provided by SCDHEC and were used to develop the SSLs. The total area of the groundwater drainage basin was determined from the topographic map and is approximately 30 acres. The covered portion of this area was estimated from the surface areas within the groundwater drainage basin that are covered by buildings and pavement. This portion is approximately 5.6 acres and includes the facilities located upgradient of the Site.

The groundwater flux was calculated during the RI for the partially weathered rock (PWR) and saprolite combined. Transmissivity (T) values were estimated during the RI by pumping tests at six wells completed in the PWR and saprolite zones. As presented in the RI, a range of T values were developed from the combined PWR and saprolite by first discarding the highest and lowest T values and calculating a mean of 220 ft^2/day from the remainder. An upper bound for T of

500 ft^2/day was calculated using the 95% upper confidence limit of the mean. A range of hydraulic gradient (i) values was also calculated from the saprolite potentiometric surface map in the RI report. The greatest gradient value of 0.01 ft/ft was calculated in the southern portion of the site between RIMW-1 and RIMW-10. The lowest gradient value of 0.008 ft/ft was calculated in the northern portion of the site between BP-1A and RIMW-6. The length of the discharged face was estimated based on the width of the groundwater plume at 1,000 feet. The range of estimated groundwater flux values was from 9 gpm to 26 gpm (CDM, 2011).

Several hydraulic performance tests were performed during the RI of the bedrock and regolith hydrogeologic zones. Specifically, aquifer pumping tests were performed on wells EW-2 and EW-3. Pumping rates were between 2.7 gpm and 3.5 gpm for both a six-hour step test and a 72-hour aquifer constant rate performance test (APT).

According to the RI, the results from the hydraulic analysis indicate that the radius of influence for extraction is less than 200 feet in bedrock at EW-3 and greater than 200 feet in the transition zone at EW-2. In the southern extraction well (EW-2), there appears to be good hydraulic communication between the regolith and bedrock zones. The northern extraction well (EW-3) appears to have direct hydraulic communication with the regolith also, even though it is completely screened in bedrock (CDM, 2008).

As presented in the RI, it was concluded that sustainable pumping rates for the extraction wells are fairly low, approximately 3 gpm for both the bedrock and transition zone wells. Based on potentiometric surface maps, the extraction wells do not appear to have significant impact on the overall potentiometric surfaces of either regolith or bedrock.

1.4 PROPOSED SOURCE AREA REMEDIAL STRATEGY

A Feasibility Study (FS) was prepared by CDM in March 2011 for the site to evaluate remedial alternatives (CDM, 2011). In completion of the FS, CDM concluded that a combined soil and groundwater remedy of thermal-enhanced multi-phase extraction (MPE) and in situ thermal treatment would be the most cost effective treatment for source area remediation.

In situ thermal treatment techniques involve raising the subsurface temperature to treat/remove impacted areas through (1) in situ steam generation in concert with vapor extraction, (2) viscosity reduction to increase mobility and allow liquid removal through pumping, and/or (3) in situ destruction of the constituents through thermal oxidation or increased bioremediation.

Under the anticipated remedy, soil and regolith groundwater treatment using in situ thermal will be applied to the areas of higher VOC concentrations to rapidly reduce the mass to levels that will significantly reduce the time required to complete remediation. The location of the thermal treatment application will be better defined following the Preliminary Design Investigation. The area of treatment will be refined during the remedial design based on one or more of the following factors: preliminary design investigation results, fate and transport modeling and pilot-scale test results.

The direct in situ thermal treatment will not be applied at all locations where VOC concentrations exceed the remediation goals (RGs) for soil and groundwater. However, this technology will accomplish remediation beyond the direct treatment zone through enhanced degradation and volatilization. As a result, post treatment monitored natural attenuation of groundwater will be necessary for both the regolith and bedrock zones. Additional data collection is necessary to accurately design the thermal treatment footprint. The following sections detail the activities necessary to collect this additional data.

2.0 OBJECTIVES AND SCOPE OF WORK

2.1 CURRENT DATA GAPS/PROPOSED ACTIVITIES

To effectively design a treatment area for the proposed thermal remedy, additional data is needed. The primary objective of the PDI will be to generate additional source area data to further, and more accurately, delineate the extent of impacted soils that may act as continuing source of mass flux to groundwater. The data will be used to calculate treatment goals, system configuration, and important operating parameters such as target temperatures and residual concentrations expected after treatment. The following data collection activities have been identified and a discussion of their relevance to the thermal treatment design is presented as follows.

1. Source area soil sample collection to refine source areas potentially requiring treatment. Existing soil data will be supplemented to design the placement, configuration and duration of thermal treatment.
2. Burn Pit Area soil samples to determine if SVE or another form of treatment of soils is required to address any residual soil impacts potentially acting as a continuing source of groundwater impact.
3. Aquifer testing to more accurately establish hydraulic characteristics of the regolith/transition zone to support the design of thermal treatment as high groundwater velocities could pose a challenge. The information also can supplement existing aquifer performance data to calibrate anticipated future fate and transport modeling.
4. Comprehensive baseline groundwater water levels to prepare accurate and updated potentiometric maps for each hydraulic zone as the last gauging event occurred in 2007.
5. Comprehensive groundwater and surface water sampling as a baseline of COCs prior to pilot-test and remedy implementation as the last sampling event occurred in 2007.
6. Surface water flow measurements and stream gauging for model calibration.

The PDI activities described in the following sections are intended to provide the information necessary to address these data gaps. The data will then be used to design a pilot scale thermal treatment system area at the Site without further data collection.

2.2 OBJECTIVES

The objective of the PDI is to collect the data necessary to design an effective and efficient remediation program using thermal treatment and possibly other technologies for specific purposes (e.g., SVE for the Burn Pit Area). Substantial investigation has been performed to characterize the source areas and the overall COC plume. Design of an effective thermal treatment system requires an understanding of specific design parameters not typically considered during previous investigation. A detailed characterization of the lithologic, hydrologic and constituent distribution and magnitude in the anticipated areas of treatment are necessary to further design the boundaries and probable duration of treatment.

3.0 PRELIMINARY DESIGN INVESTIGATION PLAN

3.1 PRELIMINARY ACTIVITIES

Several pre-investigation activities will be implemented prior to initiating field activities associated with the PDI.

3.1.1 Quality Assurance Program Plan and Health and Safety Plan

The previously approved QAPP, as prepared by CDM in connection with the RI, will be amended to reflect data collection techniques not utilized in the RI. URS will submit the QAPP addenda to SCDHEC for review and approval. In addition, URS will prepare a Health and Safety Plan (HASP) as required to complete the work safely and to protect the public.

3.1.2 Temporary Field Office

URS will set up a temporary field office at the Site. Ideally, office space in one of the existing buildings will be available. If not, a mobile field office will be delivered and set up onsite.

The office facility will be equipped with computer systems, facsimile, telephone services, and a copy machine. Necessary project plans, drawings and supporting documentation will be located in the office facility. Sanitary facilities will be provided in or near the support facilities.

Equipment and supply storage areas will be established adjacent to the appropriate work areas. Personnel and equipment decontamination areas will be constructed and identified in accordance with the Site-specific HASP requirements.

3.1.3 Utility Markout/Clearance

Proposed exploration locations shown on **Figures 12** and **13** will be confirmed and marked in the field by URS prior to conducting intrusive subsurface activities. Utilities will subsequently be located and marked using one of two procedures. For those areas that fall on public property, URS will notify the South Carolina One Call Center, the public utility locator service, which will mark any utilities that are known to exist near the areas of proposed assessment. The locations shall be marked at the land surface using spray paint and industry standard practices. For those investigation locations that fall outside of the responsibility of the SC One Call Center (i.e., locations on private property), a private utility locator will also be contracted to locate any utilities near or adjacent to the areas in which drilling is proposed. Prior to advancing any boring URS will hand auger to a depth of five feet below ground surface.

3.1.4 Clearing and Grubbing

Brush clearing and grubbing will be conducted to the extent necessary to provide the needed open space and access to conduct the groundwater and surface water investigations along Fishing and Wildcat Creeks. Brush will be cleared and left on-site.

3.2 SOURCE AREA DELINEATION

3.2.1 Source Area Soil Sampling

3.2.1.1 Approach

The goal of the soil sampling is to refine the vertical and horizontal dimensions of the actual area requiring treatment. The overall strategy for soil boring placement is to fill data gaps between existing clean areas and known impacted zones to establish the treatment footprint. As field data becomes available, proposed borings will be moved or stepped out as necessary to accomplish the goal. Two methods will be used to collect soil samples. Rotosonic drilling will be used in areas where information is required in the vadose zone and aquifer sediments. Direct push technology (DPT) will be used in areas where information is required in the vadose zone only. Proposed additional soil source area boring locations are indicated on **Figures 14 and 15**. A table stating the objective of these proposed borings is included as **Table 5**. To expedite receipt of the soil quality data the soil samples will be analyzed onsite using a South Carolina certified mobile laboratory. Onsite real time analysis of soil samples by the mobile laboratory will help guide the need for additional soil boring locations to fill in known data gaps.

Installation of the borings and soil sampling will be conducted consistent with the procedures outlined in the project QAPP. The soil samples selected for analysis will be submitted to the onsite mobile laboratory for analysis of VOCs using SW-846 Method 8260B. As use of the South Carolina certified mobile laboratory is acceptable in respect to the constituents being analyzed for, it is not necessary to send duplicate samples to additional laboratories. Samples will be analyzed for the site specific VOCs identified in the 2011 Feasibility Study (CDM, 2011). The site specific COCs for soil and groundwater are provided in **Table 6**.

In addition to the soil quality samples, an additional six samples will be collected for the laboratory analysis of the following physical parameters:

- Grain-size analyses
- Fraction organic carbon
- Bulk density
- Wet unit weight
- Specific Gravity

- Air filled porosity
- Percent saturation

Laboratory data will be validated per the procedures identified in the QAPP.

To limit the potential for transfer of COCs between sampling locations, downhole drilling tools will be cleaned using a solution of potable water and laboratory grade detergent (e.g., Alconox® or a similar product) followed by a rinse with potable water using a heated pressure washer or equivalent piece of equipment at a centralized decontamination pad. Decontamination fluids will be collected and managed as investigation-derived wastes as described in Section 5.0.

3.2.1.2 Methodology

Soil borings will be advanced by a South Carolina licensed drilling contractor using either a rotosonic drilling rig or direct push drilling rig (i.e., Geoprobe). Several borings will be advanced using the rotosonic drilling rig to top of competent bedrock to collect additional lithologic information for calibration of the proposed groundwater model as well as the design of the proposed remedial treatment to top of competent bedrock. Specifically, these borings will be installed to better define the vertical extent of treatment especially where data gaps exist in regards to the thickness of the transition zone and top of bedrock interface. Proposed rotosonic borings are indicated on **Figure 14**. Soil samples will be collected using a rotosonic core barrel. Following collection, each sample will be visually classified according to the Unified Soil Classification System (USCS). Care will be taken to identify zones or layers exhibiting differences in grain-size distribution where distribution of constituents may differ. These data will be recorded on field soil boring log forms along with sample recovery, drilling tool diameter, borehole diameter, depth to groundwater and field screening information. After logging the sample, each soil core will be divided into 2 feet sections and a sample from each section will be retrieved for screening with an organic vapor analysis (OVA) meter (i.e., FID or PID).

Upon receipt of the mobile laboratory results of the soil samples collected from the rotosonic drilling, URS will review the data and locate additional soil borings if necessary to define the area of presumed “source” soils requiring treatment. These samples will be stepped out from the proposed rotosonic boring locations and in the area of the former Burn Pit. These additional borings will be installed using a DPT drilling rig and only advanced to the top of the saturated zone. A tentative shallow soil boring location map depicting the possible locations of borings advanced by the DPT drilling rig is provided as **Figure 15.** Soil samples will be collected to direct push refusal with a solid barrel in four-foot intervals, utilizing a clear polyethylene sampler liner that soil enters during sampler placement. Following collection, each sample will be visually classified according to the USCS. Care will be taken to identify zones or layers exhibiting differences in grain-size distribution or color in the overall sample matrix. These data will be recorded on field soil boring log forms along with sample recovery, blow counts (as applicable), the type of drilling and sampling equipment, drilling tool diameter, borehole diameter, depth to groundwater and field screening information. After logging the sample, a portion of the sample will be placed in a glass jar covered with aluminum foil or in a plastic Ziploc bag for screening of volatile organic compounds (VOCs) using an OVA meter.

The soil sample(s) collected from each boring that exhibit the highest OVA reading will be submitted to the onsite mobile laboratory for analysis. If all of the OVA readings are within 10% of each other, the sample at the surface and the sample directly above the saturated zone will be submitted for analysis by the mobile laboratory. The mobile laboratory can analyze up to 20 VOC samples a day. It is anticipated that rotosonic and direct push drilling rigs will be onsite simultaneously to collect samples for the mobile laboratory unit. Based on sample results provided by the mobile laboratory, additional soil boring locations may be determined.

Physical parameter samples will be collected using a DPT drilling rig to advance sample liners. The samples will be capped and shipped on dry ice via standard chain of custody procedures to a SC certified laboratory for analysis.

3.2.2 Soil Boring Abandonment

Each soil boring will be properly abandoned according to SC Well Regulations R. 61-91 following completion of screening and soil sampling activities. Soil borings that are terminated above the water table will be back filled with native cuttings or bentonite chips. For soil borings that breach the water table, abandonment will be completed using a bentonite/portland cement slurry mix.

3.2.3 Light Non-Aqueous Phase Liquid Delineation

Further delineation of the lateral and vertical extent of Light Non-Aqueous Phase Liquid (LNAPL) will be completed using DPT to advance a laser induced fluorescence probe (LIF) at approximately 39 locations within the known LNAPL plume (**Figure 16)**. As indicated on the figure, proposed LIF locations will be spaced on approximately 25 foot spacing around the known free product zone (measured in existing/abandoned monitoring wells). Final locations will be dependent upon accessibility and real time data collection. The purpose of this screening level investigation will be to define the current extent of the LNAPL plume in the regolith. This information will be used to establish the appropriate LNAPL treatment footprint.

The LIF technology is a high-resolution vertical profile tool utilized to detect subsurface LNAPL. The LIF is used to delineate the depth and horizontal extent of LNAPL. The fiber optic-based fluorescence system is deployed with DPT or cone penetrometer equipment. The LIF system uses a laser to emit pulses of monochromatic light down a fiber optic line to a probe where the light is emitted and excites any polycyclic aromatic hydrocarbon (PAH) containing compounds in the subsurface, causing them to fluoresce with a characteristic wavelength signature. The induced fluorescence from the PAHs is returned over a separate fiber optic line to the surface where it is quantified using a detector system. The peak wavelength and intensity provide information about the type of petroleum or potential interferences.

The rate of LIF advancement at each location will be dependent upon the presence and magnitude of LNAPL. The LIF will be advanced until no fluorescence is logged or refusal is encountered. The depth to which the LIF can be advanced is dependent on geology and the durability of the LIF probe. These factors will ultimately determine the penetration depths achieved at a given location. Prior to each working day, the instrument will be tuned and calibrated by the subcontractor according to manufacturer's recommendations. Proposed LIF explorations are provided on **Figure 16**.

Upon completion of each LIF borehole, the subcontractor will backfill the completed LIF boreholes to the ground surface using a cement-bentonite grout slurry or similar sealing material. As needed, the sensory portion of the LIF will be cleaned between explorations.

Upon completing the LIF investigation, data will be presented in a report from the subcontractor that includes a description of the investigation, specific data collected during the investigation, methods and specifications of equipment used to collect the data, a map showing the locations of LIF explorations, and graphical presentations of the results in two and three-dimensional views. LIF logs showing fluorescence wavelengths and intensities with depth will be provided as an attachment. These data will be used to define the current vertical and horizontal extent of LNAPL.

3.3 HYDRAULIC TESTING

3.3.1 Hydraulic Testing – Single Well Tests

Data concerning the hydraulic properties of the groundwater systems at the Site are sparse and there are currently no reliable estimates of the hydraulic properties of fractured bedrock.

3.3.1.1 Approach

Single-well hydraulic testing will be performed on a subset of existing wells to obtain estimates of hydraulic conductivity of the saprolite, transition zone, and the fractured bedrock. The hydraulic property data obtained from these tests will be used to evaluate variations in site transmissivity and groundwater velocity. This data will also be used to calibrate future predictive groundwater modeling efforts if required for the Site. The model will be used to help forecast the performance of the existing remedy or alternative technologies in achieving the established cleanup objectives.

3.3.1.2 Methodology

Rising head tests will be performed in existing wells screened in the saprolite, transition zone material and bedrock. Wells selected for rising head tests will be based upon a consideration of the plume location, historical groundwater COC data, and results of the LIF survey to provide data across the lateral area and vertical extent of the plume.

In general, rising head tests will be performed in the following manner:

1. Prior to performing rising head tests, well construction and geologic information (i.e., well diameter, borehole diameter, screen length, total well depth, and the depth interval of the geologic unit screened by the well) will be tabulated. To the extent practicable, readily observable well construction information that is needed for the analysis of the slug test data (i.e., casing radius and well depth) will be verified and recorded in a field note book and/or on a rising head test data collection form.
2. A pressure-sensitive transducer/data logger will be lowered in the well to approximately 1 foot off the bottom of the well. The transducer used for the testing will be rated for pressures appropriate for hydraulic heads in the monitoring wells. The transducer will be secured at the wellhead and the depth of the transducer in the well will be recorded in a field notebook and/or on the data collection form.
3. A dedicated bailer will be used to "instantaneously" remove a volume of water from the well. The bailer will be a minimum of 30 inches in length. Various sized bailers of different volume will be used for subsequent testing, as feasible, to create different displacements during the testing. Theoretically, the different displacements should yield comparable estimates of hydraulic conductivity. The rising head tests will be performed using two different sized bailers.
4. Prior to removing the bailer the static water level will be measured in the well and recorded in a field notebook or on the data collection form.
5. The data logger/transducer will be programmed with the test parameters.
6. Once programmed, the water level sensed by the transducer will be recorded in the field notebook. The transducer will then be raised by a measured increment and the water level sensed by the transducer will be rechecked to verify that the transducer and data logger are generating accurate water level data. Theoretically, the difference in the hydraulic head should be equal to the measured incremental change in the transducer depth. In the event that the difference between the observed change and

the measured incremental change exceeds 0.05 feet, the transducer will be taken out of service and a new transducer that meets the above criteria will be used.

7. After verifying that the transducer is providing accurate measurements of water level change, the data logger will be activated and the bailer will be rapidly withdrawn from the well.
8. When the water level has recovered approximately 90 percent or after a maximum of 60 minutes, the test will be stopped.
9. After the test has been stopped and when the water level has recovered to within at least 80 percent of the static water level, the test will be repeated following steps 3, 7, and 8.

At the end of each day or more frequently as necessary, data will be downloaded to a laptop computer and emailed to the data manager, and will be retained in the project file pending analysis. Results of the rising head tests will be documented in a PDI Report describing the methods used to perform the rising head tests and analyze the data, and will present a summary of the results of the data analysis. The PDI Report will include graphical data plots generated using aquifer testing software.

3.3.2 Hydraulic Testing –Temporary System Shutdown/Recovery Test

To allow the aquifer to re-equilibrate the extraction wells and trench pumps will be stopped and the existing extraction and treatment system temporarily shut down.

3.3.2.1 Approach

The existing pump and treat system will be temporarily shut down during the PDI activities to allow the aquifer to equilibrate to natural flow conditions. The system will be shut down approximately two weeks prior to PDI work plan activities and allowed to equilibrate for approximately of one month prior to implementing the comprehensive groundwater monitoring event discussed in Section 3.4. The equilibration of the aquifer will be monitored in a fashion similar to that of a pumping test recovery phase. The hydraulic property data obtained from the recovery of the aquifer will be used to further understand aquifer dynamics at the site and calibrate future modeling efforts completed at the site.

3.3.2.2 Recovery Test Methodology – Objectives/Well Locations

Prior to pump and treat system shutdown a comprehensive groundwater gauging event will be conducted with an electronic water level meter. In addition, pressure transducers will be installed in existing recovery wells along with several surrounding wells to provide real time data collection of groundwater recovery following the system shutdown. In addition to transducer data collection, manual groundwater elevation data will be collected with an electronic water level meter in several wells on a routine basis throughout the aquifer equilibration period. The potential wells utilized for aquifer rate of recovery monitoring are shown on **Figure 17**.

3.4 PLUME EVALUATION/MONITORING

Upon completion of the investigative tasks described herein, a well location/elevation survey will be conducted and groundwater samples will be collected and analyzed from the existing monitoring wells.

3.4.1 Well/Boring Location Survey

Each of the newly installed soil borings will be surveyed to establish the horizontal and vertical (elevation) positions of the borings relative to the existing soil boring and monitoring well network. Horizontal and vertical accuracy will be within 1 and 0.01 feet, respectively. Surveying will be conducted by a surveyor licensed in the State of South Carolina. The surveyor will provide an updated base map showing the locations of the soil borings along with ground surface elevations.

3.4.2 Groundwater Monitoring and Analysis

A comprehensive groundwater gauging and sampling event will be conducted for existing site monitoring wells to provide a baseline of COC concentrations prior to implementation of a remedy and to update COC concentrations from the last sampling event conducted in 2007 as part of the RI.

3.4.2.1 Approach

The purpose of the comprehensive monitoring event will be to provide current groundwater quality data from which predictive groundwater flow and transport modeling can be completed and efficacy of future remedial actions can be measured. Samples collected from the wells will be analyzed for the known site specific COCs as established in the FS. Samples will be analyzed for VOCs by SW-846 Method 8260B (**Table 6**). In addition, groundwater collected from 12 wells will be analyzed for monitored natural attenuation (MNA) parameters. The 12 wells are the same wells sampled for MNA parameters during the RI. These wells will be sampled for MNA parameters to provide an additional MNA data set prior to thermal treatment. MNA parameters will include samples analyzed for nitrate and sulfate by Method 9056A and iron by Method 6010. Wells that will be sampled as part of the comprehensive monitoring event are shown on **Figure 2** and summarized in **Table 4.**

3.4.2.2 Methodology

All onsite monitoring wells will be gauged prior to purging and sampling activities. An electronic oil/water interface probe with a probe accuracy of ±0.01 feet will be used to measure the depth to water. Following gauging and prior to sampling, monitoring wells will be purged using standard low flow techniques described in the following paragraphs. Temperature, pH, specific conductance, dissolved oxygen, and oxidation-reduction potential will be measured in-situ following purging. In addition, ferrous iron will be measured in the field for wells designated for MNA sampling. Groundwater samples will then be collected from the well, placed in laboratory supplied containers, placed on ice for preservation and submitted to a South Carolina certified laboratory for analysis.

Low Flow Sampling Procedure

Low flow sampling methods will be used to obtain groundwater samples. Groundwater sampling will be performed in general accordance with the EPA Low Flow Sampling Method as described in the most recent update of Low-Stress (low-flow) Groundwater Sampling Procedures (EPA, 2010). Prior to purging the well, the water level in the well will be measured using an electronic water level meter with an accuracy of ±0.01 foot and the volume of water contained in the well screen will be calculated using information presented on the well construction log. The well will subsequently be purged of a minimum of one screen volume (three if possible) using a precleaned variable speed submersible pump or peristaltic pump (depending upon the depth to groundwater in the well) equipped with well-dedicated polyethylene tubing. The pump intake will be set near the midpoint of the water column in the screen interval. The discharge rate will be controlled to minimize drawdown, to the extent feasible, in wells screened across the water table and to avoid dewatering the well screen of wells screened below the water table.

After purging one well screen volume from the well, field indicator parameters (i.e., pH, temperature, specific conductance, redox potential, and dissolved oxygen) will be measured at three to five minute intervals using a Yellow Springs Instruments (YSI) Model 650 Water Quality Meter or equivalent equipped with a flow cell. The meter will be calibrated at the beginning of each day using appropriate calibration standards and checked for drift at the end of each day. Calibration records will be maintained in a field notebook. Measurements of static water level, field indicator parameters, drawdown, and purge rate will be recorded in a field notebook and/or on summary field sample data sheets. Purging will continue until three consecutive measurements meet the following criteria:

- pH does not vary by more than +0.1 standard pH unit,
- Temperature does not vary by more than 1 degree Celsius (^{o}C),
- Specific conductance does not vary by greater than +10 percent,

- Dissolved oxygen when greater than 1 milligram per liter (mg/l) does not vary by more than 10 percent or by greater than +0.2 mg/l when less than 1 mg/l,and
- Redox potential does not vary by more than + 10 millivolts (mv).

Upon reaching stabilization, the flow cell will be disconnected from the pump discharge line and samples will be collected into pre-preserved sample containers for analysis. A separate aliquot of sample will be collected into a separate container for measurement of turbidity. If encountered, wells that purge dry at low flow rates (i.e., <300 milliliters) will be sampled with a bailer once the well has sufficiently recharged. Purge water generated during sampling will be collected and will be treated on-site in the existing groundwater treatment system and discharged to the local wastewater treatment facility.

Hydrasleeves® No-Purge Bag Samplers

Hydrasleeve sampling will be conducted in conjunction with low-flow sampling to evaluate the feasibility of using this more efficient and lower waste sampling method for future sampling events. Several of the monitoring wells listed in **Table 3** will be sampled using Hydrasleeves® samplers. Approximately 20% of the wells will be sampled by both Hydrasleeves® and low-flow conventional methods. Wells will be selected based on the lithological unit (i.e., saprolite, transition zone, bedrock) in which the well is screened and relative position within the plume (i.e., source area, downgradient) to provide a snap shot of Hydrasleeve performance across the Site.

Hydrasleeves® are no-purge sampler bags used to collect samples for analysis for not only VOCs but also inorganics (i.e., metals, natural attenuation parameters). The Hydrasleeves® sampler collects a discrete sample from within the screened interval of the monitoring well without purging, and relies on ambient flow and diffusion of constituents from the aquifer into the well screen. When the Hydrasleeves® is removed from the well, a physical sample of water from within the well screened interval is collected with minimal displacement and disturbance of the water column. Once the Hydrasleeves® sampler is full, the sample sleeve is sealed and the sample is isolated from the overlying water column. URS has used Hydrasleeves® on Superfund Sites in EPA Region 4 and other EPA Regions with EPA concurrence. Our work has demonstrated that co-located samples collected using Hydrasleeves®, and low-stress sampling methods for analysis of VOCs, have provided statistically comparable results.

The Hydrasleeves® will be installed, at a minimum, approximately 48-hours prior to the collection of the sample to allow the Hydrasleeves® to reach equilibrium with the surrounding groundwater. At the end of the equilibration period, the Hydrasleeves® will be retrieved and their contents transferred into appropriately preserved laboratory supplied sample containers. After retrieval, field indicator parameters will be monitored in-situ using the YSI 556 or equivalent water quality meter. The Hydrasleeves® data may be used to provide recommendations regarding the implementation of long-term groundwater monitoring using Hydrasleeves® at the site.

General Sample Collection Procedures

Groundwater sample containers will be labeled with the following information: sample location/identification, date and time of sample collection, requested analytical parameter and analytical method, sample preservative, and the sampler's initials. Following collection, samples will be logged on a chain-of-custody form and placed in a secure cooler with ice for shipment by courier service to the laboratory for analysis.

Prior to and between uses at each monitoring location, reusable equipment (i.e., submersible pumps, flow cells, and water quality meter) will be cleaned using a solution of distilled water and Alconox® or Liquinox® followed by a rinse with distilled water. Spent cleaning solutions, along with purge water generated during sampling, will be collected and disposed of through the onsite wastewater treatment system.

Field and laboratory QA/QC samples will be collected during each sampling event as described in the QAPP to provide data to evaluate the representativeness, accuracy and precision of analysis, and the effectiveness of decontamination procedures.

Analytical results for the QA/QC samples will be reviewed and evaluated along with calibration records, tuning results, surrogate spike recoveries, holding times, and detection limits to verify the usability of the data with or without qualifications. The data review will follow the most recent EPA national data validation functional guidelines for evaluating laboratory analytical data for volatile organic compounds. Results of the data will be documented in data validation memoranda along with qualifications to the data (if any) resulting from the review information presented in the laboratory analytical data packages.

3.5 SURFACE WATER ASSESSMENT ACTIVITIES

A surface water assessment will be conducted for Fishing and Wildcat Creeks to provide a baseline of possible COCs within surface water and flow measurements of the creeks prior to implementation of a remedy. In addition, surface water measurements are needed for calibration of the groundwater fate and transport model discussed previously.

3.5.1 Surface Water Sampling

Surface water samples will be collected from the Fishing and Wildcat Creeks to assess whether COCs are present in surface water above South Carolina Surface Water Criteria. These samples will be analyzed for site specific VOCs using SW-846 Method 8260Band total suspended solids (TSS). The samples will be collected from the 7 locations (i.e., PSC-SW-1 through PSC-SW-7) shown on **Figure 18**. These sample locations were selected based on previous samples collected by CDM in 2004 and the 2007 groundwater plume in relationship to Wildcat Creek. The purpose of these samples will be to obtain current surface water COC concentrations.

Surface water sampling will be performed as close as practicable to low or average flow conditions (i.e., during a seasonal period of dry weather and at a minimum of three days after the last significant rainfall defined as a total of 0.25 inches or greater over a 24 hour period) to provide conservative concentrations of COCs in surface water. The samples will be collected beginning at the most downstream location to minimize the potential for disturbances within the stream, due to sampling activities, to adversely affect the representativeness of the samples.

Surface water samples will be collected by submersing a new, clean dedicated laboratory sample container in the center of the water column and decanting the contents into labeled, pre-preserved, laboratory-supplied sample containers.

Surface water discharge measurements will be performed at designated locations shown on **Figure 18** at the time of sample collection. Discharge measurements will be obtained by the cross-sectional area velocity method using a Sontek Flowtracker Acoustic Doppler Velocimeter (or similar device), which is designed to provide accurate measurements in streams with flow depths as small as one inch.

Surface water sample locations and corresponding surface water discharge monitoring locations will be flagged with surveyor's tape labeled with the sample location identification and will be located using conventional survey methods and mapped on the existing site plan.

3.5.2 Staff Gauges

Four staff gauges will be installed in the Wildcat Creek and Fishing Creek to gauge surface water elevations (**Figure 18**). One staff gauge will be installed in the upstream portion of the Wildcat Creek at the property boundary and the other near the confluence with Fishing Creek. Similarly, staff gauges will be installed in Fishing Creek. Each staff gauge will be constructed of a three to four foot section of steel pipe or an equivalent material driven into the streambed. Staff gauge locations will be marked with surveyor's flagging identified with the station identification. The staff gauge location and reference elevation (i.e., top of the gauge) will be established by appropriate survey methods (horizontal accuracy of 5 feet, and vertical accuracy of 0.1 foot or better). Water levels will be collected from the staff gauges at the time that they are installed and during site-wide water level monitoring events.

3.6 PRELIMINARY DESIGN INVESTIGATION REPORT

Results of the PDI will be documented in a Preliminary Design Investigation Report to be prepared and submitted to SCDHEC following completion of the investigations described herein. The report will include the following:

- A summary of the objectives of each investigation performed.
- A description of each of the investigation activities and methods used to acquire data.
- A brief summary of the findings relative to the objectives of the investigation. Data will be presented in tabular and graphical formats to support conclusions. The report will include tables documenting all groundwater laboratory analytical data, groundwater field parameter measurements, slug test result summaries, soil geotechnical laboratory results, and monitoring well elevation data. The report will also include the following figures:
  - Plan view maps illustrating survey area topography, groundwater seepage locations, monitoring well locations, and access path locations;
  - Plan view maps and cross-sections illustrating the horizontal and vertical flow gradients within the investigation area; and
  - Plan view maps and cross-sections illustrating the horizontal and vertical distribution and intensity of the PCE plume within the investigation area.

Report appendices will include data validation memoranda, laboratory data reports, PID data, slug test data and hydraulic conductivity calculations, soil boring lithology logs, sample data sheets, survey location and elevation data.

4.0 ANALYTICAL PROGRAM AND FIELD OPERATIONS

4.1 ANALYTICAL PROGRAM

The PRP Group intends to update the existing approved QAPP, as necessary, to include information relevant to investigatory activities planned as outlined in this work plan. A copy of that QAPP will be submitted to SCDHEC separately subsequent to approval of this PDI Work Plan. A QAPP is currently in place for the Phillips Services Site (CDM, December 2006). The site-specific QAPP provides detailed information concerning the organization, activities, and QA/QC protocols needed to achieve project data quality objectives (DQOs). The information provided in this section is not intended to duplicate the content, information, or procedures presented in the QAPP. Information provided in this section is intended to supplement the QAPP with specific information or procedures directly related to the groundwater plume delineation investigations described herein. For topics not specifically included in this section, the reader is directed to the QAPP.

4.1.1 Data Quality Objectives

DQOs are qualitative and quantitative statements that specify the quality of the data required to support decisions made during field activities and are based on the end uses of the data. DQO levels address various data uses, and the QA/QC effort and methods that are required to achieve the desired level of data quality. These DQO levels include:

- **Field Screening** (DQO Level I): This DQO level is characterized by the use of portable instruments such as field water quality instrumentation, colorimetric tubes and/or an FID or PID which can provide real-time data to assist in the optimization of sampling locations and health and safety support. Data can be generated regarding the presence or absence of certain constituents at sampling locations. Level I DQOs have been established for activities presented in this work plan. These DQOs include the following: (1) Use of a PID and/or Color Tec® colorimetric tubes to provide semi-quantitative data to define changes in the magnitude of CVOC impacts with depth in saprolite, transition zone, and within discrete fractures, to assist in selecting groundwater monitoring intervals for permanent wells; and (2) Use of the YSI Model 556 water quality meter or equivalent and turbidity meter to measure field parameters during groundwater sampling.
- **Field Analyses** (DQO Level II): This level is characterized by the use of portable analytical instruments, which can be used on site, or in a mobile laboratory stationed near a site. Depending upon the types of constituents, sample matrix, and personnel skills, qualitative and quantitative data can be obtained. These DQOs have been

established for activities presented in this work plan. These DQOs include the use of a SC DHEC certified mobile laboratory to provide quantitative soil data for site specific VOC impacts with depth in the regolith to assist in selecting additional soil borings and the thermal treatment footprint.

- **Screening Data with Definitive Confirmation** (DQO Level III): These data are generated by rapid, less precise methods of analysis with less rigorous sample preparation. Sample preparation steps may be restricted to simple procedures such as dilution with a solvent, instead of elaborate extraction/digestion. Screening data provides analyte identification and quantification, although the quantification may be relatively imprecise. At least 10% of the screening data should be confirmed using appropriate analytical methods and QA/QC procedures and criteria associated with definitive data. Screening data without associated confirmation data are not considered data of known quality. Use of the LIF to identify potential zones of free product is considered DQO Level III, since monitoring wells and subsequent sampling will be performed to confirm the level of impacts identified by the LIF.
- **Definitive Data** (DQO Level IV): These data are generated using rigorous analytical methods, such as approved EPA reference methods. Data are analyte-specific, with confirmation of analyte identity and concentration. These methods produce tangible raw data (e.g., chromatograms, spectra, or digital values) in the form of paper printouts or computer-generated electronic files. Analysis may be conducted at the site or at an off-site location, as long as the QA/QC requirements are satisfied. To be definitive, either the analytical or total measurement error must be determined. Laboratory generated chemical analysis of groundwater samples collected as part of the plume assessment investigations, to confirm the extent of the plume as described herein, are considered to be definitive analytical data (i.e., Level IV DQO) as are the data generated from PFMs.

4.1.2 Analytical Methods

Soil and aqueous (groundwater, surface water) samples collected during the proposed investigation will be analyzed for VOCs by South Carolina-certified laboratories. In addition, groundwater samples will be analyzed for MNA parameters by a South Carolina-certified laboratory. The laboratory will have a quality control program in place that is comparable to the EPA Contract Laboratory Program to ensure the reliability and validity of the analyses performed. Analytical procedures will be documented as standard operating procedures, which specify the minimum requirements for each procedure. Data generated by the laboratory will be considered as Definitive Data (DQO Level IV).

4.1.3 Quality Control Samples

Field and laboratory QA/QC samples will be collected to evaluate the representativeness and usability of soil and groundwater analytical data generated as part of the preliminary design investigation described herein. A discussion of specific quality control samples, the method of collection, and the frequency of analysis will be discussed in an updated QAPP along with parameters that will be evaluated to assess representativeness and usability. The updated QAPP will be submitted to SCDHEC under a separate cover subsequent to approval of this PDI Work Plan.

4.2 FIELD OPERATIONS

Field operations will be conducted in accordance with the specifications and procedures provided in an updated QAPP that is revised to include certain modifications/enhancements to address specific investigation activities, not covered in the current QAPP. The updated QAPP will include Standard Operating Procedures (SOPs) for investigation activities discussed in this work plan along with discussions of quality control checks that will be implemented to assure that the data collected during the investigations are accurate, representative, reliable, and usable for the intended purpose. The updated QAPP will also detail performance evaluation criteria for assessing laboratory analytical data. Calibration procedures for field instrumentation provided by equipment manufacturers will be incorporated as appendices to the updated QAPP. A copy of the updated QAPP will be provided to SCDHEC for review and approval prior to implementing this work plan.

4.2.1 Project Team

URS Corporation has been selected and authorized by the PRP Group to implement the preliminary design investigation activities at the Site.

Key project team personnel include:

- PSC PRP Group Project Coordinator – Randy Smith (Mount Vernon, NH – 603-674-0004)
- URS Program Manager – Brett Berra, PE (Morrisville, NC – 919-461-1100)
- URS Field Operations Manager/Site Health and Safety Officer – Amanda Taylor, PG (Charlotte, NC – 704-522-0330)
- URS Senior Hydrogeologist – Rob MacWilliams, PG (Charlotte, NC – 704-522-0330)
- URS Lead Engineer – Bob Lunardini, PE (Tallahassee, FL – 850-402-6402)

4.2.2 Recordkeeping

Documentation of an investigative team's field activities serves as a basis for technical Site evaluation and report preparation. It is essential that field documentation provide a clear, unbiased picture of field activities. Aspects of sample collection, sample handling, and observations will be documented in field books or on applicable field forms. Bound field books will be used on work assignments requiring field activities. Entries into field books will be legibly written in indelible ink and provide a clear record of all field activities.

The following information will be provided on the inside front cover or the first page of the field book:

- Project Name and Project Manager
- Site Location
- Job Number
- Date
- Individual to whom the field notebook is assigned

Instructions and procedures relating to the format and technique by which notebook entries are made are as follows:

1. Leave the first two pages blank. They will provide space for a table of contents to be added when the field notes are complete.
2. Entries will be made in waterproof ink.
3. Entries will be made 1in language that is objective, factual, and free of personal feelings or other terminology, which might appear unclear or inappropriate.
4. Entries will be printed as neatly as possible.
5. Entries will be logged in military time format.
6. Errors in the field notes will be indicated by drawing a single line through the text, ensuring the text is still legible, and initialing and dating the errors.
7. A new page will be started at the beginning of each day's field activities and any remaining blank portion of a page at day's end will be marked out with a single initialed line.
8. The person taking notes shall sign, number and date each page.
9. Later additions, clarifications, or corrections must be dated and signed.

Instructions and procedures providing guidance on the information to be recorded on field activities are provided below:

1. A new page will be used at the start of each day's activities. The date, time, on-site personnel, and observed weather conditions will be noted. Significant changes in weather conditions will be noted as they occur.
2. Sketches or maps to identify photo and/or sample locations will be included in the field book. Landmarks and/or direction of north will be included.
3. On-site health and safety meetings or will be documented.
4. As part of the chain-of-custody procedure, sampling information will include sample number, date, time, sampling personnel, sample type, designation of sample as a grab or composite, analysis requested with the analytical method (as appropriate) and any preservative used. Sample locations will be referenced to sample numbers on a Site sketch or map.
5. Information for in-situ measurements will include a sample ID number or location ID, date, time, and personnel taking measurements.
6. If on-site interviews occur, relevant information obtained will be recorded. Names of persons interviewed, the interest group represented (if applicable), address, and phone number will be recorded.
7. Any other relevant information, which would be difficult to acquire at a later date, will be recorded.

Copies of field notes and original field data sheets will be presented to the field operations manager as soon as practicable and will be maintained in the project file.

4.2.3 Sample Designation

Samples collected for specific field analyses or measurement data will be recorded directly in bound logbooks (field books) and on field forms (as appropriate) using designated sample identification. Standard sample labels will be attached to the sample containers and the labels will carry the designated sample identification and sample analysis procedure.

All samples collected for analysis will be assigned a unique sample identifier. The identifier will link specific samples to the location and, if applicable, the depth from which the sample was collected, sample media, and sample type. The sample identifiers will be recorded on the sample label that is attached to the sample container, in a project field book and/or sample log, on sample chain-of-custody forms, and in the project database. The sample designation references location and includes qualifiers.

Sample Location. The first portion of the sample designation will be a one- to three-letter alphabetic code that will identify the type of sample location as identified below. The codes for investigation-derived waste samples will correspond to a particular container (i.e., drum, tank, etc.) instead of a location.

- L – LIF location
- SB – Soil Boring
- CGW – Groundwater from soil core location
- MW or EW – Monitoring or extraction well location
- SW – Surface water sample location
- IDW – investigation-derived waste (IDW) sample (sample of waste generated by the PDI activities).

The initial alphabetic code will be followed by a sequential numeric code for each of the above location types that specifies the location of the sample horizontally and if appropriate vertically. For example, a groundwater sample collected from RIMW-6 would be identified as sample RIMW-6. Similarly, a groundwater sample collected from a depth of 50 to 52 feet at a rock core location from a new bedrock well PSC-1BR would be designated as PSC1BR-CGW50-52.

Qualifiers. The final portion of the sample designation is used to identify quality assurance samples. Samples that are collected for routine analysis only (i.e., not for quality assurance purposes) will not have qualifiers appended. Additionally, samples with a qualifier included in the sample designation are considered secondary and will be used only for data quality assessment. For example, the results from the analysis of a duplicate sample will not be used in the assessment of Site conditions. Only the results from the primary sample will be used for assessment. The following qualifiers will be appended to the appropriate sample type:

- DP – duplicate sample,
- RP – replicate sample, and
- MS/MSD – matrix spike/matrix spike duplicate.

Certain samples will require special sample designations. In general, the samples requiring special designations are quality control-related samples and include trip blanks and equipment/rinsate blanks. The procedures for assigning sample designations for these samples are as follows.

Trip blanks and temperature blanks will accompany each shipping container that contains samples for VOC analysis. The sample designation for trip and temperature blanks will be derived using the date the samples are shipped:

1. Begin the sample designation with "TB" (for trip blanks) or "TEMP" (for temperature blanks) followed by the numerical month, day, and year (e.g., TB-01152012 for January 15, 2012).
2. Add a media identifier code (e.g., S for soil or sediment, GW for water).
3. Add a sequential number if more than one trip blank by media is being shipped on a single day (e.g., 2 for the second of two water trip blanks shipped on the same day).

Equipment blanks will be collected from any equipment used in sample collection or processing that is re-used for more than one sample location and is not equipped with a liner. Equipment blanks will be designated using the same sample designation for the first sample taken after decontamination procedures. The qualifier "RB" will be appended to the sample designation to indicate an equipment rinsate blank. For example, for an equipment blank from a pump after decontamination and before sampling monitoring well RIMW-6, the sample designation for the equipment blank will be RIMW-6RB.

Sampling information regarding blanks will be recorded directly in bound logbooks (field books) and/or referenced field forms using designated sample identification nomenclature. Standard sample labels will be attached directly onto sample bottleware/containers immediately before or after sample collection. Information on sample labels will include:

- Unique sample designation,
- Date and time that the sample was collected,
- Laboratory analyses that will be conducted on the sample,
- Sample preservative (if appropriate), and
- Initials of person collecting the sample.

Completed labels will be secured to the sample container with clear tape.

4.2.4 Investigation-Derived Waste

IDW that may be generated during the groundwater plume assessment investigation will primarily include decontamination fluids, well development and purge water, groundwater discharged during pumping tests, soil cuttings, sampling containers, and spent PPE. IDW will be managed in general accordance with EPA Region IV procedures and relevant state and federal regulations and guidelines. Decontamination fluids used during sampling will consist of potable and distilled rinse water, solutions containing laboratory-grade detergent (e.g., Alconox® or Liquinox®). Soil cuttings from borings and well installation activities will be contained in appropriately labeled drums and characterized to determine disposal options. Disposable equipment, used PPE, and other Site trash will be collected and disposed as non-hazardous materials. Drums and other waste containers will be labeled with relevant information including contents, date of generation, and generator. Disposal of IDW (other than groundwater or decontamination fluids) will occur at an appropriate off-site facility after the contents have been adequately characterized.

It is anticipated that groundwater and decontamination fluids generated during site activities (groundwater sampling, aquifer testing) will be treated on-site in the existing groundwater treatment system and discharged to the local wastewater treatment facility.

4.3 SCHEDULE

It is anticipated that preliminary design investigation activities will begin in the fall of 2012. Activities will commence with the shutdown of the pump and treat system, baseline gauging and LIF investigation. Once initiated, it is anticipated that proposed investigation work tasks will be accomplished within the general timeframes presented below. The timing of activities will be dependent upon several factors including regulatory approval and decisions regarding discretionary corporate expenditure

- Regulatory review and approval: 4 weeks
- QAPP preparation and submittal: 4 weeks
- Preparation for field activities: 3 weeks
- Implementation of field activities: 8 weeks including shutdown of the existing extraction and treatment system and aquifer recovery monitoring
- Data validation: 3 weeks
- Report development, review and submittal: 6 weeks

5.0 REFERENCES

CDM, 2004, *Initial Site Characterization Summary Report*, Atlanta, GA. October 2004.

CDM, 2006, *Quality Assurance Project Plan*, Atlanta, GA. December 2006.

CDM, 2008. *Remedial Investigation Report*, Atlanta, GA. September 2008.

CDM, 2011. *Feasibility Study Report*, Atlanta, GA. March 2011.

Phillips Services Corp. *Petro-Chem SC SCD 044 442 333 RCRA Facility Investigation Part 1 Report.* Columbia, IL. August 23, 1999.

TABLES

Table 1
Historical Soil Analytical Results
Phillip Services Corporation Site

Location	Sample Id	Sample Date	Sample Depth	1,1,1-TCA (µg/kg)	1,1,2-TCA (µg/kg)	1,1-DCE (µg/kg)	1,2,4-TCB (µg/kg)	1,2-DCB (µg/kg)	1,2-DCA (µg/kg)	1,4-DCB (µg/kg)	Acetone (µg/kg)	Benzene (µg/kg)	Chlorobenzene (µg/kg)	Chloroform (µg/kg)	cis-1,2-DCE (µg/kg)	Ethylbenzene (µg/kg)	Methylene chloride (µg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Chromium (mg/kg)	Iron (mg/kg)	Manganese (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)
EPA Industrial Soil Screening Level				3.80E+07	5300	1.10E+06	99000	9.80E+06	2200	12000	6.30E+08	5400	1.40E+06	1500	2.00E+06	27000	960000	1.6	1.90E+05	NSL	7.20E+05	23000	NSL	5100	10	5200
EPA Risk Based RSL for Protection of Groundwater				2600	0.077	93	2.9	270	0.42	0.4	2400	0.2	49	0.053	8.2	1.5	2.5	0.0013	120	NSL	270	21	NSL	0.4	0.011	78
B-3	B-3	6/16/1992	14-18	NA	NA	NA	NA	NA	NA	NA	NA	--	NA	NA	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-116	MW-116	6/17/1992	4-9	NA	NA	NA	NA	NA	NA	NA	NA	--	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-117	MW-117	6/16/1992	8-12	NA	NA	NA	NA	NA	NA	NA	NA	--	NA	NA	NA	50 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-118	MW-118	6/16/1992	4-6; 9-11; 14-16	NA	NA	NA	NA	NA	NA	NA	NA	19 J	NA	NA	NA	83 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-119	MW-119	6/19/1992	9-11	NA	NA	NA	NA	NA	NA	NA	NA	--	NA	NA	NA	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RI-BCK1	RIBCK1-01	6/7/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3	99	4	52000	240	1.8	2	55	170
	RIBCK1-34	6/7/2006	3-4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.6	50	22	29000	170	6.5	--	31	77
RI-BCK2	RIBCK2-01	6/7/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.2	52	15	23000	840	6	--	23	77
	RIBCK2-34	6/7/2006	3-4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.84	460	7.2	29000	1000	6.3	--	30	78
RIMW-1	RIMW-1:10-12	12/19/2006	10-12	--	--	1.81	--	--	6.87	--	--	26	2.41	1.78	1100	--	2.37	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-1:12-14	12/19/2006	12-14	--	--	--	--	--	1.26	--	--	1.16	--	--	81	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-51:12-14	12/19/2006	12-14	--	--	--	--	--	3.04	--	--	4.01	--	--	460	--	0.99	NA	NA	NA	NA	NA	NA	NA	NA	NA
RIMW-5	RIMW-5:0-1	12/15/2006	0-1	--	--	--	--	--	0.36	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-5:4-6	12/15/2006	4-6	--	--	19	--	--	2.52	--	--	--	--	--	1.44	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-5:12-14	12/15/2006	12-14	--	1.2	1.07	--	--	1700	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-5:18-20	12/15/2006	18-20	--	0.65		--	--	870	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
RIMW-6	RIMW-6 : 0-1	12/12/2006	0-1	--	--	5.15	--	--		--	130	--	--	--	3400	1.88	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-6: 4-6	12/12/2006	4-6	--	--	79	--	--	0.37	--	160	1.01	--	--	23000	3.07	0.72	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-6: 8-10	12/12/2006	8-10	--	--	1.81	--	--	--	--	7100	--	--	--	3200	0.52	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
RIMW-7	RIMW-7:0-1	12/20/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-7:4-6	12/20/2006	4-6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-7:8-10	12/20/2006	8-10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
RIMW-8	RIMW-8:0-1	12/18/2006	0-1	4.38	--	1.07	--	--	1.57	--	--	--	--	--	--	0.57	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-8:2-4	12/18/2006	2-4	110	--	90	--	--	390	--	19	0.55	1.62	--	30	79	24	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-8:4-6	12/18/2006	4-6	2400	23	120	--	1.36	1500	--	220	--	8.83	4.06	11	350	130	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-8:6-8	12/18/2006	6-8	2600	6.99	14	--	0.78	1900	--	1800	--	4.69	2.33	4.91	110	100	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-8:8-10	12/18/2006	8-10	3600	30	160	--	1.01	1900	--	3300	3.06	7.05	6.24	9.01	280	210	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-8:10-12	12/18/2006	10-12	240	11	6.77	--	--	910	--	1700	0.49	1.09	1.24	1.31	29	42	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-58:10-12	12/18/2006	10-12	260	12	5.31	--	--	610	--	1700	--	0.84	0.88	0.94	23	30	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-8:12-14	12/18/2006	12-14	1100	42	110	--	--	1700	--	1600	2.63	1.42	8.19	6.17	96	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
RIMW-19	RIMW-19: 8-10	12/12/2006	8-10	--	--	2.77	--	--	2.11	--	--	1.07	--	--	310	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-19: 12-14	12/12/2006	12-14	--	--	--	--	--	0.59	--	7	--	--	--	140	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RIMW-19: 16-18	12/12/2006	16-18	--	--	0.67	--	--	1.15	--	--	--	--	--	63	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
RISB-1	RISB1-01	6/1/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.7	76	15	58000	290	27	3	65	270
RISB-2	RISB02-01	6/1/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.5	56	45	20000	440	96	1.9	22	32
	RISB-92	6/1/2006	0-1	--	--	--	--	24.9	71	23.2	--	0.86	--	6.94	6.31	--	--	1.8	53	34	20000	460	96	1.6	20	32
	RISB2-913	6/1/2006	9-13	--	--	--	--	110	780	20	2800	247	2.45	63	323	90	9.38	2	280	77	28000	1100	80	--	32	59
	RISB2-17-21	6/1/2006	17-21	--	--	--	--		350	--	229	264	--	9.62	159	28.9	--	--	160	98	16000	540	61	2	17	33
RISB-3	RISB3-01	6/1/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.2	150	27	42000	1200	19	2.4	42	160
	RISB3-9-13	6/1/2006	9-13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	83	16	17000	250	41	1.8	17	46
RISB-4	RISB-4-01	6/6/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.4	92	73	52000	670	46	2.8	55	220
	RISB-4-59	6/6/2006	5-9	--	--	--	--	2.5			110	0.64	4.1		6.3	7.7	--	2.8	120	26	29000	700	11	--	29	94
RISB-5	RISB5-01	6/1/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.4	93	33	50000	520	12	--	48	180
	RISB5-5-9	6/1/2006	5-9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.95	130	26	25000	630	34	2.7	26	55
RISB-6	SB6-01	6/5/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	240	23	--	1	83	20	20000	490	60	2.3	21	60
	SB6-1315	6/5/2006	13-15	--	--	8.1	--	1.2	2	0.72	--	--	--	--	130	0.3	--	--	100	2.8	34000	310	20	2.6	36	180
RISB-7	SB7-01	6/5/2006	0-1	--	--	6.7	--	--	--	--	--	--	--	--	--	--	--	1.3	96	23	86000	520	39	4.9	91	390
	SB7-15	6/5/2006	1-5	--	--	9.7	--	--	--	--	--	--	--	--	0.82	0.66	--	1.6	130	5.2	39000	280	8.6	2.3	41	150
RISB-8	RISB-8-01	6/6/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	94	30	30000	300	86	1.9	33	100
	RISB-8-58	6/6/2006	5-8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	190	11	43000	390	67	3.2	49	190
RISB-9	RISB-9-01	6/6/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	110	14	29000	290	39	2.9	32	110
	RISB-9-59	6/6/2006	5-9	2.7	--	3.1	--	--	--	--	--	--	--	--	--	--	--	--	230	24	34000	460	69	2.8	36	110
RISB-10	RISB-10-59	6/6/2006	5-9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.9	660	16	13000	3300	60	--	15	72
RISB-11	RISB11-01	6/1/2006	0-1	--	--	--	--	1.06	--	--	--	--	--	--	38	--	--	1.2	100	34	32000	380	43	3.1	38	100
	RISB11-15	6/1/2006	1-5	--	--	0.84	--	--	4.93	--	35	5.43	--	--	840	--	--	1.3	87	48	66000	820	17	2.6	68	270
	RISB-11-59	6/1/2006	5-9	--	--	1.11	--	--	100	--	--	42	--	7.39	316	--	--	1.5	100	12	35000	530	29	2.4	36	110
RISB-12	SB12-01	6/5/2006	0-1	--	--	--	--	--	--	--	--	150	--	--	--	830	--	1.7	670	38	39000	7300	53	3.6	35	160
	SB12-15	6/5/2006	1-5	--	--	--	--	--	--	--	19000	5600	--	--	390	150000	--	1.5	98	43	49000	920	23	2.1	52	210
	SB12-1721	6/5/2006	17-21	--	--	1.8	--	--	--	--	13	--	--	--	14	0.93	--	--	60	61	15000	280	32	2.2	16	32
RISB-13	RISB13-01	6/1/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	105	--	1.4	170	49	39000	630	65	2.5	45	120
	RISB13-59	6/1/2006	5-9	--	--	2.04	0.52	4.05	1.56	1.09	580 J	14	1.18	--	4.37	17	--	--	98	34	30000	670	60	2.5	31	68
	RISB913	6/1/2006	5-9	--	--	--	1.01	5.96	1.1	1.46	43	7.3	1.54	--	1.96	13	--	0.72	100	36	33000	660	63	1.6	35	72
RISB-14	RISB14-01	6/1/2006	0-1	--	--	--	--	--	--	--	5.84	--	--	--	--	--	--	1.3	110	18	47000	360	51	3.1	55	220
	RISB14-59	6/1/2006	5-9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	110	1.1	48000	230	26	--	47	250
	RISB914	6/1/2006	5-9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	160	2	46000	500	33	2.2	48	220
	RISB14-913	6/1/2006	9-13	--	--	1.25	--	--	0.63	--	--	--	--	0.3	0.64	--	--	--	130	2.8	43000	280	31	2.7	45	200
RISB-15	RISB15-01	6/1/2006	0-1	--	--	1.37	--	--	--	--	--	--	--	--	--	--	--	2.6	140	26	39000	310	15	--	41	120
	RISB15-9-13	6/1/2006	9-13	--	--	1.59	--	--	0.71	--	--	--	--	0.24	0.55	--	--	--	140	0.63	33000	640	27	2.4	35	140

Table 1
Historical Soil Analytical Results
Phillip Services Corporation Site

Location	Sample Id	Sample Date	Sample Depth	1,1,1-TCA (µg/kg)	1,1,2-TCA (µg/kg)	1,1-DCE (µg/kg)	1,2,4-TCB (µg/kg)	1,2-DCB (µg/kg)	1,2-DCA (µg/kg)	1,4-DCB (µg/kg)	Acetone (µg/kg)	Benzene (µg/kg)	Chlorobenzene (µg/kg)	Chloroform (µg/kg)	cis-1,2-DCE (µg/kg)	Ethylbenzene (µg/kg)	Methylene chloride (µg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Chromium (mg/kg)	Iron (mg/kg)	Manganese (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)
EPA Industrial Soil Screening Level				3.80E+07	5300	1.10E+06	99000	9.80E+06	2200	12000	6.30E+08	5400	1.40E+06	1500	2.00E+06	27000	960000	1.6	1.90E+05	NSL	7.20E+05	23000	NSL	5100	10	5200
EPA Risk Based RSL for Protection of Groundwater				2600	0.077	93	2.9	270	0.42	0.4	2400	0.2	49	0.053	8.2	1.5	2.5	0.0013	120	NSL	270	21	NSL	0.4	0.011	78
RISB-16	RISB16-01	6/1/2006	0-1	64.7	--	39.2	--	--	--	--	--	--	--	--	55	--	--	1.8	90	30	99000	2200	33	3	99	510
	RISB16-15	6/1/2006	1-5	13	2	6.02	--	--	--	--	--	--	--	0.54	20	--	--	0.55	190	14	33000	60	30	--	32	180
RISB-17	RISB17-01	6/2/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.7	79	23	51000	700	6.5	3.1	53	180
	RISB17-913	6/2/2006	9-13	--	--	--	--	--	--	--	--	--	140	--	--	--	--	1.2	72	47	47000	990	15	--	49	240
RISB-18	RISB-18-0-1	5/31/2006	0-1	--	--	--	3.4	1600 J	9.6	600 J	160	3.9	150	--	7.5	1.6	1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-18-15	5/31/2006	1-5	--	99	--	95	22000	4800	4000	--	--	450	--	460	--	--	0.92	79	32	21000	830	66	--	22	42
RISB-19	RISB-19-01	5/31/2006	0-1	--	--	8.2	--	7.3	--	--	57	12	1.9	0.47	70	310	0.88	1.5	100	37	29000	1700	48	1.9	29	82
RISB-20	RISB20-59	6/2/2006	5-9	--	--	--	--	--	--	--	--	--	--	--	2100	--	--	1.4	130	4.1	37000	380	4.5	2.5	37	160
RISB-21	RISB21-01	6/2/2006	0-1	--	--	--	--	--	--	--	10	--	--	--	--	--	--	1.1	200	5.6	42000	520	8.3	--	43	150
	RISB21-59	6/2/2006	5-9	--	--	--	--	--	--	--	100	--	--	--	--	330	--	0.7	22	8.4	23000	280	2.4	--	25	110
RISB-22	RISB-22-01	5/31/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.5	110	27	31000	550	46	3.2	38	110
RISB-23	RISB-23-01	5/31/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.8	53	35	16000	250	90	2.5	21	16
	RISB-23-911	5/31/2006	9-11	--	--	1	--	--	--	--	--	5.7	--	0.23	260	--	--	--	100	56	21000	470	53	2.1	28	60
RISB-24	RISB-24-01	5/31/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.1	290	74	39000	1100	150	3.3	47	97
RISB-25	RISB-25-01	5/31/2006	0-1	--	--	--	--	2.5	2.7	0.45	--	--	--	0.91	1.5	--	--	2.1	62	25	19000	370	130	1.8	19	13
	RISB-25-913	5/31/2006	9-13	--	--	--	--	--	24000	--	--	--	--	460	2900	35	110	2.8	100	31	22000	340	32	--	20	63
	RISB-25-1720	5/31/2006	17-20	--	--	--	--	--	45000	--	--	--	--	690	4100	--	160	--	130	34	22000	340	52	3	25	26
RISB-26	RISB-26-0-1	5/31/2006	0-1	--	--	7	1.3	14		3.5	140	2.5	--	--	220 J	1.7	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-26-15	5/31/2006	1-5	--	--	5.8	--	--	--	--	28	1.6	--	--	140	--	--	1.9	110	50	45000	640	64	--	42	130
RISB-27	RISB-27-01	5/31/2006	0-1	--	--	--	--	--	--	--	10	--	--	--	--	0.45	--	0.74	170	6.4	31000	110	16	2	39	160
	RISB-27-59	5/31/2006	5-9	--	--	--	--	--	--	--	--	--	--	--	2	--	--	0.59	64	29	8500	210	21	1.9	9.3	19
RISB-28	RISB-28-01	5/31/2006	0-1	120	--	7.7	--	--	7.2	--	--	--	--	1.1	2.2	--	--	1.3	200	100	49000	370	43	3.1	66	200
	RISB-28-5-9	5/31/2006	5-9	1900 J	--	400 J	--	--	27	--	--	--	0.87	10	4.6	80	37	--	160	7.8	37000	830	32	2	37	160
	RISB-28-913	5/31/2006	9-13	26	--	2.3	--	--	10	--	--	--	--	--	--	2	1.1	--	160	10	47000	380	27	3.1	61	220
RISB-29	RISB-29-01	5/31/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.9	150	54	72000	540	32	3.8	87	290
	RISB-29-1-S	5/31/2006	1-5	--	--	--	--	--		--	--	--	--	--	--	70000	--	1.9	160	68	40000	870	43	2.9	51	120
	RISB-29-913	5/31/2006	9-13	2.8	--	1.7	--	--	23		89		--	--	--	16	9.1	NA	NA	NA	NA	NA	NA	NA	NA	NA
RISB-30	RISB-30-01	5/30/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.97	53	61	24000	400	140	--	33	23
	RISB-30-913	5/30/2006	9-13	--	--	--	--	--	--	--	--	--	--	--	650	0.75	--	--	75	9.1	22000	77	11	1.9	31	62
RISB-31	RISB-31-01	5/30/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.7	110	43	43000	1500	11	2.7	57	210
	RISB-31-913	5/30/2006	9-13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.69	170	15	22000	120	37	2.5	29	83
RISB-32	RISB-32-01	5/31/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.8	170	42	18000	890	9.1	1.8	25	64
RISB-33	RISB-33-59	6/6/2006	5-9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.74	82	29	50000	480	3.4	2.7	56	170
	RISB-33-1720	6/6/2006	17-20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	150	16	20000	340	45	2.5	23	78
	RISB-533	6/6/2006	17-20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	150	13	18000	380	41	2.2	19	64
RISB-34	RISB-34-1113	6/6/2006	11-13	--	--	--	--	--	--	--	43	--	--	--	2.9	--	--	1.7	130	3.2	42000	190	6.5	2.3	42	180
RISB-35	RISB35-59	6/1/2006	0-1	--	--	--	--	--	--	--	17	--	--	--	0.76	--	--	0.67	140	6.5	50000	250	20	2.7	47	240
	RISB35-01	6/1/2006	5-9	--	--	--	--	--	--	--		--	--	--	--	--	--	1.3	49	28	20000	250	34	1.9	22	40
	RISB935	6/1/2006	5-9	--	--	--	--	--	--	--	21	--	--	--	1.59	--	--	0.76	150	6	49000	300	21	3.2	50	240
RISB-36	RISB36-01	6/1/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.5	150	12	29000	470	34	2.3	32	66
	RISB36-1316	6/1/2006	13-16	--	--	--	--	--	--	--	--	--	--	--	0.81	--	--	0.78	110	0.76	54000	170	9.8	3.1	51	260
RISB-37	RISB-37-01	5/30/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.9	130	16	30000	1000	8.7	2	42	100
	RISB-37-913	5/30/2006	9-13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.2	110	22	8700	110	9.6	--	13	61
RISB-38	RISB-38-01	5/30/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.82	53	37	19000	400	87	1.9	24	29
	RISB-38-1721	5/30/2006	17-21	--	--	--	--	--	--	--	--	--	--	--	51	--	--	--	110	6.6	48000	300	30	3.4	65	230
RISB-39	RISB-39-01	5/31/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.8	120	40	46000	600	51	3.6	60	150
	RISB-39-1317	5/31/2006	13-17	--	--	--	--	--	--	--	48	5.5	2.3	--	--	62	--	0.93	170	18	17000	1100	7.6	--	23	54
RISB-40	RISB40-01	6/1/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.1	130	27	39000	460	19	2.5	46	130
	RISB40-913	6/1/2006	9-13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.68	100	17	9000	190	24	1.8	9.5	12
RISB-41	RISB41-01	6/1/2006	0-1	--	--	--	--	--	--	--	41	--	--	--	--	--	--	1.5	79	25	78000	1200	30	2.5	74	400
RISB-42	RISB42-01	6/1/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.1	96	13	37000	670	22	2.1	43	150
RISB-43	RISB43-01	6/1/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.2	70	71	24000	440	100	2.2	26	47
RISB-44	RISB-44-01	6/6/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.6	50	53	57000	80	6.3	3.4	66	250
	RISB-44-5-8.5	6/6/2006	5-8.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.2	130	20	32000	610	48	--	32	100
RISB-45	SB45-01	6/5/2006	0-1	--	--	340	--	--	1400	--	--	--	--	--	250	36	54	1.6	58	5.8	54000	200	9.2	2.8	58	260
	SB45-15	6/5/2006	1-5	--	--	480	--	--	2500	--	170	--	--	--	350	50	110	1.4	130	2.1	37000	250	6.2	2.7	39	170
RISB-46	RISB-46-01	5/31/2006	0-1	--	--	--	3500	730	--	710	--	64	560	--	--	590	--	2	210	99	55000	1200	180	3	54	100
	RISB-946	5/31/2006	0-1	--	--	--	17000	3700	--	3700	--	150	2000	--	--	2300	--	1.8	260	68	54000	200	180	--	52	93
	RISB-46-15	5/31/2006	1-5	--	--	--	1300	93	--	120	--	2.5	27	--	--	32	--	0.85	140	31	20000	840	59	2.2	21	37
RISB-47	RISB47-01	6/1/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.1	180	40	23000	870	100	2.2	26	38
	RISB47-913	6/1/2006	9-13	--	--	--	--	--	14	--	25	5.16	110	0.48	110	33	--	--	110	96	56000	620	140	3.4	62	63
RISB-48	SB48-01	6/5/2006	0-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.93	64	18	27000	280	28	2.8	32	88
	SB48-1315	6/5/2006	13-15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	92	44	14000	170	40	1.9	16	20
RISB-49	RISB49-01	6/2/2006	0-1	--	--	--	--	--	--	--	44	1.3	--	--	3.5	--	--	2.1	71	33	25000	990	72	1.9	24	69
	RISB49-1317	6/2/2006	13-17	--	--	--	--	--	--	--	990	490	--	--	200	6300	--	--	71	33	11000	93	22	2.6	12	19
RISB-50	RISB50-913	6/2/2006	9-13	28	--	8.2	--	--	75	--	13	--	--	--	--	58	21	--	60	32	13000	230	26	1.8	15	28
RISB-51	RISB-51-913	6/6/2006	9-13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	140	20	24000	820	70	2.4	26	35
	RISB-951	6/6/2006	9-13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	150	36	31000	740	77	2	30	62
RISB-52	RISB-52-01	6/6/2006	0-1	--	--	--	--	--	0.54	--	44	--	--	--	--	--	--	0.79	76	41	25000	660	91	--	22	52
	RISB-52-913	6/6/2006	9-13	--	--	--	--	--		--	--	--	--	--	--	--	--	--	69	28	11000	360	29	1.8	12	17

Table 1
Historical Soil Analytical Results
Phillip Services Corporation Site

Location	Sample Id	Sample Date	Sample Depth	1,1,1-TCA (µg/kg)	1,1,2-TCA (µg/kg)	1,1-DCE (µg/kg)	1,2,4-TCB (µg/kg)	1,2-DCB (µg/kg)	1,2-DCA (µg/kg)	1,4-DCB (µg/kg)	Acetone (µg/kg)	Benzene (µg/kg)	Chlorobenzene (µg/kg)	Chloroform (µg/kg)	cis-1,2-DCE (µg/kg)	Ethylbenzene (µg/kg)	Methylene chloride (µg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Chromium (mg/kg)	Iron (mg/kg)	Manganese (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)
EPA Industrial Soil Screening Level				**3.80E+07**	**5300**	**1.10E+06**	**99000**	**9.80E+06**	**2200**	**12000**	**6.30E+08**	**5400**	**1.40E+06**	**1500**	**2.00E+06**	**27000**	**960000**	**1.6**	**1.90E+05**	**NSL**	**7.20E+05**	**23000**	**NSL**	**5100**	**10**	**5200**
EPA Risk Based RSL for Protection of Groundwater				**2600**	**0.077**	**93**	**2.9**	**270**	**0.42**	**0.4**	**2400**	**0.2**	**49**	**0.053**	**8.2**	**1.5**	**2.5**	**0.0013**	**120**	**NSL**	**270**	**21**	**NSL**	**0.4**	**0.011**	**78**
RISB-56	**RISB-56:0-1**	**12/15/2006**	**0-1**	--	--	--	--	--	0.079	--	--	--	2.59	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-56:4-6	**12/15/2006**	**4-6**	--	--	--	--	--	0.43	--	--	--	0.51	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-56:8-10	**12/15/2006**	**8-10**	--	--	--	--	--	1.31	--	140			--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-56:12-14	**12/15/2006**	**12-14**	--	--	--	--	--	5.06	--	12000	--	--	--	--	3.3	13	NA	NA	NA	NA	NA	NA	NA	NA	NA
RISB-57	**RISB-57:0-1**	**12/6/2006**	**0-1**	--	--	--	--	--	--	--	--	--	--	--	0.82	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-57:3-5	**12/6/2006**	**3-5**	--	--	--	--	--	--	--	51 J	2.25	--	--	180 J	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-57:10-14	**12/6/2006**	**10-14**	--	--	1.6	--	--	25 J	--		11 J	2.54	--	600 J	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-57:14-18	**12/6/2006**	**14-18**	--	--	1.15	--	--	30 J	--	3.8	9 J	2.07	--	740 J	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-57:18-22	**12/6/2006**	**18-22**	--	--	--	--	--	4.78	--	--	0.52	0.39	--	68	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
RISB-58	**RISB-58:0-1**	**12/18/2006**	**0-1**	--	--	--	--	--	--	--	--	--	--	0.85	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-58:4-6	**12/18/2006**	**4-6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-58:10-12	**12/18/2006**	**10-12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-58:14-16	**12/18/2006**	**14-16**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-58:18-20	**12/18/2006**	**18-20**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
RISB-59	**RISB-59 0-1**	**12/18/2006**	**0-1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-59 4-6	**12/18/2006**	**4-6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-59:10-12	**12/18/2006**	**10-12**	7.68	--	12	--	--	--	--	--	--	--	--	0.57	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-559:12-14	**12/18/2006**	**12-14**	1.52	--	1.33	--	--	0.3	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-59:12-14	**12/18/2006**	**12-14**	4.78	--	0.99	--	--	2.91	--	--	--	--	--	--	--	0.98	NA	NA	NA	NA	NA	NA	NA	NA	NA
RISB-61	**RISB-61:10-12**	**12/17/2006**	**10-12**	--	--	--	--	--	0.53	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-61:16-18	**12/17/2006**	**16-18**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-61:20-22	**12/17/2006**	**20-22**	--	--	--	--	--	--	--	--	--	--	--	0.58	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
RISB-62	**RISB-62:0-1**	**12/19/2006**	**0-1**	--	7.42	--	3.58	7.03		4.86	--	--	1.42	1.23	3.26	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-62:4-6	**12/19/2006**	**4-6**	--	210	5.11	8.88	8200	720	1700	--	4.25	320	17	27	0.54	1.16	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-62:8-10	**12/19/2006**	**8-10**	--	280	1.64	5.11	5900	880	1200	--	2.56	310	14	26	--	1.33	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-62:12-14	**12/19/2006**	**12-14**	--	120	--	1.39	1100	610	130	--	--	15	5.24	7.87	--	0.96	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-562:12-14	**12/19/2006**	**12-14**	--	210	2.99	2.79	970	770	380	--	--	44	15	26	--	1.35	NA	NA	NA	NA	NA	NA	NA	NA	NA
RISB-63	**RISB-63:0-1**	**12/17/2006**	**0-1**	--	--	4.81	2.96	19	8.87	3.23	270	0.64	4.01	--	5.71	0.54	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-63:4-6	**12/17/2006**	**4-6**	--	1.54	6.1	--	120	360	27	--	--	3.39	4.07	93	--	0.91	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-63:8-10	**12/17/2006**	**8-10**	--	4.21	3.88	1.26	360	940	41	--	1.49	3.3	8.28	81	--	1.26	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-63:14-16	**12/17/2006**	**14-16**	--	10	1.51	--	130	910	30	--	1.31	2.2	5.15	39	--	1.16	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-63:16-18	**12/17/2006**	**16-18**	--	2.69	--	--	19	530	3.11	5.17	--	--	--	2.32	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
RISB-64	**RISB-64-05**	**1/24/2007**	**0-5**	--	--	--	--	1100	930	227	3900	155	--	--	11000	1100	45.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-64-510	**1/24/2007**	**5-10**	--	--	80.3	--	3600	11000	640	24000	2100	207	750	58000	33000	402	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-64-1015	**1/24/2007**	**10-15**	--	--	--	--	41.7	9300		36000	281	62.2	150	5200	62.1	237	NA	NA	NA	NA	NA	NA	NA	NA	NA
RISB-65	**RISB-65-05**	**1/24/2007**	**0-5**	--	--	--	--	--	--	--	9800	329	--	--	110	3700	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-65-510	**1/24/2007**	**5-10**	--	--	--	--	--	--	--	31000	24.8	--	--	39.6	112	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-65-1015	**1/24/2007**	**10-15**	--	--	--	--	--	--	--	28000	118	--	--	302	310	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-65-1520	**1/24/2007**	**15-20**	--	--	12	--	0.27	5.48	--	1200	91	1.34	--	436	46	3.24	NA	NA	NA	NA	NA	NA	NA	NA	NA
RISB-66	**RISB-66-05**	**1/24/2007**	**0-5**	--	--	10	--	--	--	--	17		--	--	0.84	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-66-59	**1/24/2007**	**5-9**	--	--	33	--	--	--	--	--	0.44	--	--	4.07	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
RISB-67	**RISB-67-05**	**1/24/2007**	**0-5**	--	--	8.04	--	--	--	--	--	--	--	--	0.73	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RISB-67-510	**1/24/2007**	**5-10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
RISS-1	**RISS-1**	**6/7/2006**	**0-1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2	33	20	9800	440	3.6	--	9.5	24
RISS-2	**RISS-2**	**6/7/2006**	**0-1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.99	58	9.9	8700	410	3.4	--	8.7	27
RISS-3	**RISS-3**	**6/7/2006**	**0-1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.3	27	20	27000	140	4.2	--	27	72
RISS-4	**RISS-4**	**6/7/2006**	**0-1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.5	120	26	19000	220	8.6	--	18	74
RISS-5	**RISS-5**	**6/7/2006**	**0-1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.2	56	23	14000	890	4.4	--	14	39
RISS-6	**RISS-6**	**6/7/2006**	**0-1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.7	44	17	24000	390	3.6	--	24	61
RISS-7	**RISS-7**	**6/7/2006**	**0-1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1	83	19	16000	560	5.7	--	16	56
RISS-8	**RISS-8**	**6/7/2006**	**0-1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.9	59	28	53000	350	4.8	--	50	160
RISS-9	**RISS-9**	**6/7/2006**	**0-1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.2	87	37	13000	800	5.3	--	13	34
RISS-10	**RISS-10**	**6/7/2006**	**0-1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.8	62	11	8000	210	5	--	8.6	23
RISS-10	**RISS-510**	**6/7/2006**	**0-1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.4	58	6.6	6800	180	4.5	--	6.9	20

Notes:
-- = Constituent not detected at listed detection limit
J = Estimated concentration
(µg/kg) = Micrograms per kilogram
(mg/kg) = Milligrams per kilogram
NE = Not established
NA = Not analyzed for this constituent
[ ] = indicates detection exceeds the EPA Region 9 Risk Based Soil Screening Level for the Protection of Groundwater (April 2012)
[ ] = indicates detection exceeds the EPA Region 9 Industrial soil screening level (April 2012).

Table 2
Summary of Groundwater Analytical Data
Phillips Services Corporation Site

Location	Sample Date	1,1,1-TCA (µg/l)	1,1,2-TCA (µg/l)	1,1-DCE (µg/l)	1,2,4-TCB (µg/l)	1,2-DCB (µg/l)	1,2-DCA (µg/l)	1,4-DCB (µg/l)	Benzene (µg/kg)	Bis(2-ethylhexyl)phthalate (µg/l)	Carbon tetrachloride (µg/l)	Chlorobenzene (µg/l)	Chloroethane (µg/l)	cis-1,2-DCE (µg/l)	Ethylbenzene (µg/l)	Isopropyl benzene (µg/l)	Methylene chloride (µg/l)	PCE (µg/l)	Toluene (µg/l)	TCE (µg/l)	Vinyl chloride (µg/l)	Xylenes (Total) (µg/l)	Manganese (mg/l)
MCL		200	5	7	70	600	5	75	5	6	5	100	NSL	70	700	NSL	5	5	1000	5	2	10000	NSL
	2/17/1995	--	--	13	--	--	--	--	1.1 J	NA	--	--	--	--	--	--	--	3.1 J	--	32	85	--	NA
	2/1998	--	--	0.8 J	--	--	--	--	--	NA	--	--	--	0.7 J	--	--	--	19	--	18	2 J	--	NA
	3/1998	--	--	--	4.3 J	--	--	--	--	NA	--	--	--	--	--	--	2.4 J	8.8	--	--	--	--	NA
	6/1998	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	15	--	13	--	--	NA
	12/1998	--	0.8 J	5	--	--	0.5 J	--	--	NA	--	--	--	--	--	--	2.3 J	46	--	260	1.2 J	--	NA
	2004	--	--	--	--	--	--	--	--	NA	--	--	--	9	--	--	--	--	--	4	--	--	0
BP-1A	1/25/2007	--	--	0.87	--	0.61	0.42	--	0.45	NA	--	1.02	--	39	--	--	--	1.37	0.15	9.07	1.4	--	NA
	2/1998	--	--	11	--	--	--	--	0.6 J	NA	--	--	--	--	--	--	--	63	--	470	3.4	--	NA
	3/1998	--	--	7.5	--	--	--	--	--	NA	--	--	--	71.5	--	--	--	96.6	--	244.8 J	2.2 J	--	NA
	6/1998	3.4	--	19	--	--	--	--	--	NA	--	--	--	--	--	--	--	91	--	660	3.1	--	NA
	12/1998	--	--	0.9 J	--	--	--	--	--	NA	--	--	--	--	--	--	--	13	--	14	1.3 J	--	NA
	2004	--	--	15	--	--	5	--	--	NA	--	--	--	120	--	--	--	120	--	390	--	--	0.48
BP-1B	1/25/2007	1.63	0.75	22	0.84	0.36	1.27	--	0.34	NA	--	1.13	--	670	--	--	--	170	0.15	620	2.06	--	NA
	2/1998	26	--	160	--	1200	--	8.9	--	NA	61	28	--	--	--	--	--	40	--	140	100	9.1	NA
	3/1998	9.6 J	1.2 J	65.1	--	--	680	--	3.2 J	NA	--	6.5 J	7	113.2	1.8 J	--	2.3 J	13.3 J	1.1 J	44.9	62.4	--	NA
	6/1998	25	--	--	--	--	1600	--	5.5	NA	--	--	37	--	--	--	--	56	--	88	38	--	NA
	12/1998	11	--	93	--	--	520 J	--	3.9	NA	--	7.3	12 J	--	2.9	--	--	16	--	34	150	--	NA
	2004	--	--	160	--	--	3600	--	--	NA	--	--	59	170	--	--	--	38	--	110	59	--	1.8
EW-1	1/25/2007	2.16	1.73	94	--	3.25	3200	--	1.94	NA	--	71	31	148	0.14	0.72	3.39	44	0.24	130	38	--	NA
	2/16/1995	--	--	--	17	1100	74	420	1.6 J	19	--	2.6 J	--	--	0.5 J	--	--	39	0.9 J	89	32	2.7	NA
	2/1998	--	--	20	--	--	2200		370	NA	--	--	--	--	--	--	--	100	--	890	--	--	NA
	3/1998	12.1	--	73.1	--	3.6 J	2.8		2.6	NA	--	0.7 J	--	319.8	2	--	--	194.3	7.8	1200.8	11.7	--	NA
	6/1998	--	--	--	--	--	4000		360	NA	--	--	--	--	--	--	--	160	--	1000	--	--	NA
	12/1998	--	--	34	--	--	2000 J		210	NA	--	--	--	--	--	--	--	120	--	780	--	--	NA
EW-2	2004	--	--	48	--	230	810		45	NA	--	--	--	700	--	--	--	170	--	1300	--	--	0.53
	3/28/1995	--	--	190	--	--	--	--	--	NA	--	--	--	--	--	--	--	180	--	1200	--	--	NA
	2/1998	15	--	100	--	--	3		4.4	NA	--	0.7 J	--	--	1.9	--	--	140	4.4	1800	24	14	NA
	3/1998	--	--	--	--	17.6	3.2	2.1	11.4	NA	--	2.1	--	0.6 J	1 J	--	--	--	3.7	--	--	--	NA
	6/1998	16	--	100	--	--	3.6		3.7	NA	--		--	--	4.3	--	--	240 J	18	1600	17	35	NA
	12/1998	13	--	100	--	--	3 J		2.3	NA	--	0.8 J	--	--	2.1	--	--	220	15	1400	23 J	8.1	NA
EW-3	2004	--	--	74	--	--	--	--	--	NA	--	--	--	890	--	--	--	270	--	1200	--	--	1.3
EW-4	1/26/2007	1.38	--	22	--	3.06	97	--	6.41	NA	--	110	400	6.58	140	7.4	8.91	1.48	540	2.5	14	280	NA
	4/19/1985	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA
	12/6/1985	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA
	3/1998	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA
	12/1998	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA
	2004	--	--	--	--	15	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	0.21
MW-100	1/23/2007	--	--	--	--	--	--	--	--	NA	--	0.52	--	--	--	--	--	--	0.12	--	--	--	NA
	2/1998	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	1.1	--	--	NA
	3/1998	--	--	--	--	--	--	--	--	NA	--	--	--	6.6	--	--	--	--	--	1.1 J	--	--	NA
	6/1998	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	1.2	--	--	NA
	12/1998	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	1.1 J	--	--	NA
	2004	--	--	--	--	--	--	--	--	NA	--	--	--	21	--	--	--	--	--	--	--	--	0.04
MW-101	1/23/2007	--	--	--	--	--	--	--	--	NA	--	0.54	--	1.87	--	--	--	--	0.18	--	--	--	NA
	2/1998	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	0.6 J	--	--	NA
	3/1998	6.3	--	--	--	--	--	--	--	1.6	--	--	--	3.8	--	--	--	28.7	--	2.5 J	--	--	NA
	2004		--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-102	1/23/2007	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	0.27	0.23	--	--	--	NA
	3/28/1995	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	51	--	--	NA
	2/1998	--	--	3.9	--	--	--	--	--	NA	--	--	--	--	--	--	--	1.3 J	--	8.5	--	--	NA
	3/1998	1.5 J	--	25.4	--	--	--	--	--	NA	--	--	--	23.9	--	--	--	21.8	--	102.1 J	--	--	NA
	6/1998	6.1	--	72	--	--	--	--	0.6 J	NA	--	--	--	--	--	--	--	53	--	210 J	1.6 J	--	NA
	12/1998	5.6	1.4 J	96	--	--	1.1 J	--	0.9 J	NA	--	--	--	--	--	--	--	80	--	430	2.6 J	--	NA
	2004	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	0.16
MW-103	1/25/2007	--	--	--	--	--	--	--	--	NA	--	--	--	0.92	--	--	--	0.41	0.15	1.15	--	--	NA

Table 2
Summary of Groundwater Analytical Data
Phillips Services Corporation Site

Location	Sample Date	1,1,1-TCA (µg/l)	1,1,2-TCA (µg/l)	1,1-DCE (µg/l)	1,2,4-TCB (µg/l)	1,2-DCB (µg/l)	1,2-DCA (µg/l)	1,4-DCB (µg/l)	Benzene (µg/kg)	Bis(2-ethylhexyl)phthalate (µg/l)	Carbon tetrachloride (µg/l)	Chlorobenzene (µg/l)	Chloroethane (µg/l)	cis-1,2-DCE (µg/l)	Ethylbenzene (µg/l)	Isopropyl benzene (µg/l)	Methylene chloride (µg/l)	PCE (µg/l)	Toluene (µg/l)	TCE (µg/l)	Vinyl chloride (µg/l)	Xylenes (Total) (µg/l)	Manganese (mg/l)
MCL		200	5	7	70	600	5	75	5	6	5	100	NSL	70	700	NSL	5	5	1000	5	2	10000	NSL
	12/6/1985	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA
	3/28/1995	--	--	28	--	--	--	--	--	NA	--	--	--	--	--	--	--	94	--	46	--	--	NA
	2/1998	--	--	1.6	--	--	--	--	0.5 J	NA	--	--	--	--	0.6 J	--	--	4.1	--	5.7	--	--	NA
	3/1998	1.8 J	--	11.3	--	--	--	--	--	NA	--	--	--	18.2	--	--	--	27	--	30.2 J	--	--	NA
	2004	--	--	--	--	--	--	--	--	NA	--	--	--	3	--	--	--	--	--	--	--	--	1.4
MW-104	1/24/2007	--	--	0.52	--	--	--	--	--	NA	--	--	--	2.93	--	2	--	1.64	0.12	1.79	--	--	NA
	2/17/1995	1.7 J	--	1.6 J	--	--	3.7 J	--	--	NA	--	--	--	--	--	--	--	4.8 J	--	9.9		11	NA
	2/1998	1.3 J	--	2.5	--	--	--	--	--	NA	--	--	--	2.3	--	--	--	0.5 J	--	3.1	--	--	NA
	3/1998	--	--	2.1 J	--	--	--	--	--	NA	--	--	--	--	--	--	3.4 J	--	--	2.1 J	--	--	NA
	6/1998	0.8 J	--	1.3 J	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	2.4	--	--	NA
	12/1998	0.8 J	--	1.9 J	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	2 J	--	--	NA
	2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	--
MW-105	1/23/2007	--	--	2.03	--	--	--	--	--	NA	--	0.52	--	--	--	--	--	--	0.16	0.29	--	--	NA
	2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	--
MW-106	1/23/2007	--	--	--	--	--	--	--	--	NA	--	0.51	--	--	--	--	--	0.29	0.19	0.23	--	--	NA
	2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	--
MW-107	1/23/2007	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA
	2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27
MW-108	1/23/2007	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA
	2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1
MW-111	1/24/2007	--	--	--	--	0.36	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA
	2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11
MW-112	1/24/2007	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA
	2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8
MW-113A	1/24/2007	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	0.14	--	--	--	NA
	2/17/1995	1.9 J	--	18	--	--	12	--	4.1 J	NA	--	--	--	--	--	--	--	16	--	--	--	--	NA
	2/1998	4.1	--	16	--	--	1.8	--	--	NA	--	--	--	--	--	--	--	35	--	70	--	0.8 J	NA
	3/1998	2.8	--	11.5	--	--	1.2 J	--	--	NA	--	--	--	25.6	--	--	--	41	--	91	--	--	NA
	6/1998	18	--	60	--	--	27	--	--	NA	--	--	--	--	--	--	--	160	--	480	1.4 J	--	NA
	12/1998	2.9	--	13	--	--	1.3 J	--	--	NA	--	--	--	--	--	--	--	39	--	86	--	--	NA
	2004	--	--	9	--	--	9	--	--	NA	--	--	--	47	--	--	--	32	--	36	--	--	0.55
MW-113B	1/24/2007	--	--	2.82	--	--	0.18	--	--	NA	--	--	--	41	--	--	--	24	0.22	16	--	--	NA
MW-114	1/24/2007	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA
	2/17/1995	--	--	3.9 J	--	--	4.9 J	--	--	NA	--	--	--	--	--	--	--	8	--	130	--	--	NA
	2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.6
MW-115A	1/24/2007	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	0.29	--	--	--	NA
	2/17/1995	--	--	190	--	--	180	--	2.4 J	NA	--	--	2.4 J	--	--	--	--	160	--	--	23	--	NA
	2/1998	--	1.8 J	140	--	--	110	--	2.3	NA	--	--	1.4 J	--	--	--	--	82	--	48	18	--	NA
	3/1998	--	--	105.4	--	--	82.3	--	1.9	NA	--	--	--	44.9	4.5	--	--	68.3	--	48 J	11.5	--	NA
	6/1998	--	--	120	--	--	87	--	1.9	NA	--	--	--	--	--	--	--	90	--	--	11	--	NA
	12/1998	--	--	120	--	--	86 J	--	2	NA	--	--	--	--	--	--	--	41	--	71	15 J	--	NA
	2004	--	--	29	--	--	25	--	--	NA	--	--	--	40	--	--	--	--	--	2	4	--	0.3
MW-115B	1/24/2007	--	--	6.68	--	--	6.61	--	0.18	NA	--	--	--	11	--	--	--	--	0.19	0.34	0.49	--	NA
	2004	--	--	--	--	--	--	--	81	NA	--	--	--	--	34	--	--	--	30	--	11	100	8.4
MW-116	1/24/2007	--	--	--	--	--	8.88	--	120	NA	--	--	5.1	5.22	67	29	0.88	--	40	--	12	160	NA
	2/1998	--	--	--	--	--	--	--	7.1	NA	--	9.5	--	--	--	--	--	--	--	--	--	160	NA
	3/1998	--	--	--	--	--	--	--	10.1	NA	--	11.2 J	--	--	--	--	--	--	--	--	--	--	NA
	6/1998	--	--	--	--	--	--	--	7.3	NA	--	8.2	--	--	--	--	--	--	--	--	--	27	NA
MW-117	12/1998	--	--	--	--	--	--	--	1.5 J	NA	--	2 J	--	--	--	--	--	--	--	--	--	14	NA
	2004	--	--	--	--	--	--	--	4	NA	--	--	--	--	--	32	--	--	--	--	--	7	6.4
	1/25/2007	--	--	--	--	0.29	--	--	2.39	NA	--	6.62	--	--	0.21	51	--	--	0.32	--	--	0.76	NA
	1/25/2007	--	--	--	--	0.19	--	--	2.43	NA	--	6.69	--	--	0.2	51	--	--	0.42	--	--	0.74	NA
	2004	--	--	--	--	--	--	--	19	NA	--	49	--	--	--	--	--	--	--	--	--	--	NA
MW-118	1/24/2007	--	--	--	--	--	--	--	--	NA	--	72	--	--	0.55	4.16	--	--	0.3	--	--	1.47	NA
	2004	--	--	5	--	--	5	--	--	NA	--	--	--	39	--		--	4	--	23	6	--	7.2
MW-119	1/24/2007	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	6.45	--	--	0.22	--	--	--	NA

Table 2
Summary of Groundwater Analytical Data
Phillips Services Corporation Site

Location	Sample Date	1,1,1-TCA (µg/l)	1,1,2-TCA (µg/l)	1,1-DCE (µg/l)	1,2,4-TCB (µg/l)	1,2-DCB (µg/l)	1,2-DCA (µg/l)	1,4-DCB (µg/l)	Benzene (µg/kg)	Bis(2-ethylhexyl)phthalate (µg/l)	Carbon tetrachloride (µg/l)	Chlorobenzene (µg/l)	Chloroethane (µg/l)	cis-1,2-DCE (µg/l)	Ethylbenzene (µg/l)	Isopropyl benzene (µg/l)	Methylene chloride (µg/l)	PCE (µg/l)	Toluene (µg/l)	TCE (µg/l)	Vinyl chloride (µg/l)	Xylenes (Total) (µg/l)	Manganese (mg/l)
MCL		200	5	7	70	600	5	75	5	6	5	100	NSL	70	700	NSL	5	5	1000	5	2	10000	NSL
	2/1998	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	1.2 J	NA
	2004	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	0.46
MW-120A	1/25/2007	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA
	2004	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	1.7
MW-120B	1/25/2007	--	--	--	--	--	--	--	23	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA
	2004	--	--	--	--	14	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	0.04
MW-121B	1/25/2007	--	--	--	--	--	--	--	--	NA	--	--	--	1.75	--	--	--	0.57	--	7.66	--	--	NA
	9/20/2007	--	--	--	--	--	--	--	--	NA	--	--	--	1.35	--	--	--	0.76	--	7.53	--	--	NA
	3/1/1998	--	--	--	--	--	--	--	--	1.7 J	--	--	--	--	--	--	--	--	--	--	--	--	NA
MW-122B	2004	--	--	--	--	29		--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	0.04
	1/25/2007	--	--	--	--	--	0.46	--	--	NA	--	--	--	--	--	--	--	--	0.12	0.25	--	--	NA
	9/20/2007	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	0.41	--	--	--	NA
	2004	--	--	210	--	11000	820	2300	63	NA	--	310	--	19000	--	--	150	--	400	--	1400	--	92
MW-123A	1/26/2007	--	9	4.5	--	2500	4900	1300	16.25	NA	--	3000	42.5	1100	4	--	29.75	--	96	37	140	17.75	NA
	2004	--	--	97	--	60	390	--	12	NA	--	73	42	510	--	--	--	12	--	260	63	--	2.3
MW-123B	1/26/2007	--	7.74	15	1.14	1400	2300	1100	17	NA	--	3500	35	680	4.56	0.95	12	2.3	90	130	84	21	NA
OB-8	12/6/1985	500	--	--	--	--	6000	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA
	1/1992	--	--	--	--	--	--	--	--	NA	--	--	2700	--	--	--	320	--	3000	--	--	--	NA
	2/1992	310	32	570	--	--	25000	--	42	NA	--	--	250	--	13	--	35	50	160	2800	140	--	NA
	2/1998	35	14	11	--	9.3	110	--	81	NA	--	630	910	11	330	--	430	17	6600	13	48	1200	NA
	3/1998	1300	350	4500	--	33	7300	--	220	NA	--	3200	2300	6700	2200	--	110000	560	38000	650	590	7700	NA
	2004	3900	160	5000	130	--	12000	--	140	NA	--	2600	2200	8200	1500	--	23000	88	38000	360	660	4900	18
OB-8A	1/26/2007	310	4.98	71	--	14	540	0.61	20	NA	--	460	1300	23	310	9.97	330	19	5200	15	24	1000	NA
	2004	--	--	--	--	--	--	--	73	NA	--	--	--	--	26	--	--	--	--	--	--	110	NA
OB-11	1/24/2007	--	--	--	--	--	2.94	--	100	NA	--	--	--	0.45	32	11	--	--	1	0.32	--	33	NA
	2004	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	640000	NA
OB-12	1/24/2007	--	--	--	--	--	1.04	--	36	NA	--	--	--	0.62	14	5.43	--	--	4.15	0.55	--	250	NA
	2004	--	--	--	--	--	--	--	--	NA	--	--	--	--	180000	--	--	--	--	--	--	600000	NA
OB-13	1/24/2007	--	--	--	--	--	--	--	18000	NA	--	--	--	--	150000 J	100000	--	--	2900	--	--	570000 J	NA
	2004	--	--	--	--	--	--	--	230	NA	--	--	--	--	170	--	--	--	11	--	--	230	5.4
OB-21	1/24/2007	--	--	--	--	--	--	--	306	NA	--	--	--	--	3100	2900	--	--	401	--	--	17000	NA
	2004	--	--	--	--	--	--	--	180	NA	--	--	--	32	170	--	--	--	21	--	--	370	3.7
OB-22	1/24/2007	--	--	--	--	--	--	--	1050	NA	--	--	--	--	46000	36000	--	--	3080	--	--	150000	NA
	2004	--	--	--	--	--	--	--	65	NA	--	--	29	--	120	--	--	--	15	--	--	180	2.1
OB-23	1/24/2007	--	--	--	--	--	2.77	--	69	NA	--	1.45	6.6	--	91	41	0.37	--	12	0.22	0.56	170	NA
OB-80A	1/1/1992	140 J	--	420	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	2100	--	--	NA
	2/1998	--	--	1.5 J	--	--	4	--	0.9 J	NA	--	3.3	--	190	--	--	--	1.2 J	--	12	3.2	--	NA
	3/1998	--	--	1 J	--	--	4	--	0.9 J	NA	--	1.5 J	--	20	--	--	--	1 J	1 J	11	4.4	--	NA
	2004	--	--	--	--	--	--	--	--	NA	--	--	--	25	--	--	--	--	--	12	5	--	1.1
OB-109	1/27/2007	--	--	1.28	--	--	0.33	--	0.66	NA	--	--	--	41	--	0.38	--	0.31	0.14	15	4.97	--	NA
OB-109A	2/17/1995	--	--	4.5 J	--	--	19	--	4.5 J	NA	--	31	--	--	--	--	--	5.4	--	15	12	--	NA
	2/1998	9.9	--	22	--	--	5	--	--	NA	--	--	--	21	--	--	71	--	120	--	--	--	NA
	3/1998	21 J	--	59 J	--	--	2.7 J	--	--	NA	--	--	--	37 J	--	--	--	150 J	--	150 J	--	--	NA
	6/1998	12	--	30	--	--	1.3	--	--	NA	--	--	--	--	--	--	--	130	--	110	--	--	NA
	12/1998	13	--	34	--	--	2	--	--	NA	--	--	--	--	--	--	--	140	--	140	--	--	NA
	2004	9	--	69	--	--	3	--	3	NA	--	--	--	77	--	--	--	260	--	140	--	--	--
OB-109B	1/27/2007	2.97	--	39	--	--	1.57	--	--	NA	--	--	--	34	--	--	--	210	0.16	44	--	--	NA
OB-110	112/6/1985	2500	--	4000	--	--	20000	--	--	NA	--	--	--	--	--	--	21000	--	3200	--	--	--	NA
	1/1992	--	--	--	--	--	--	--	37000	NA	--	--	--	--	320000	--	--	--	310000	--	--	--	NA
	2/1992	6.3	--	400	--	--	41	--	49	NA	--	3.8 J	7600	--	450	--	1900	6.5	9800	12	390		NA
	2/17/1995	9.6	--	390	--	--	3600	--	19	NA	--	16	2600	--	15	--	--	9.6	81	100	490	61	NA
	2/1998	--	--	280	--	--	1800	--	--	NA	--	33	490	--	--	--	--	--	--	110	140	--	NA
	3/1998	36	--	990 J	--	--	2400 J	--	37 J	NA	--	130 J	2400 J	42 J	37		2700 J	16 J	480 J	130 J	560 J	91 J	NA
	2004	--	--	37	--	--	--	--	55	NA	--	--	2300	--	610	--	66		7000		94	1600	6.9
OB-110A	1/26/2007	55.3	--	71.5	--	1.9	46.6	--	33.9	NA	--	70.4	1300	7.2	640	32.4	29	6.9	2500	3.9	34.4	1700	NA

Table 2
Summary of Groundwater Analytical Data
Phillips Services Corporation Site

Location	Sample Date	1,1,1-TCA (µg/l)	1,1,2-TCA (µg/l)	1,1-DCE (µg/l)	1,2,4-TCB (µg/l)	1,2-DCB (µg/l)	1,2-DCA (µg/l)	1,4-DCB (µg/l)	Benzene (µg/kg)	Bis(2-ethylhexyl)phthalate (µg/l)	Carbon tetrachloride (µg/l)	Chlorobenzene (µg/l)	Chloroethane (µg/l)	cis-1,2-DCE (µg/l)	Ethylbenzene (µg/l)	Isopropyl benzene (µg/l)	Methylene chloride (µg/l)	PCE (µg/l)	Toluene (µg/l)	TCE (µg/l)	Vinyl chloride (µg/l)	Xylenes (Total) (µg/l)	Manganese (mg/l)
MCL		200	5	7	70	600	5	75	5	6	5	100	NSL	70	700	NSL	5	5	1000	5	2	10000	NSL
OB-110B	2/1998	--	--	--	--	--	48	--		NA	--	--	1.8 J	--	--	--	--	0.9 J	--	1.7	2.5 J	--	NA
	3/1998	--	--	--	--	--	66 J	--	0.5 J	NA	--	--	1.5 J	14 J	--	--	--	--	--	--	3.9 J	--	NA
	6/1998	--	--	--	--	--	45	--	--	NA	--	--	--	--	--	--	--	--	--	--	2 J	--	NA
	12/1998	--	--	--	--	--	14	--	--	NA	--	--	--	--	--	--	--	--	--	--	3.1 J	--	NA
	2004	--	--	--	--	--	21	--	--	NA	--	--	--	6	--	--	--	--	--	--	--	--	0.03
	1/26/2007	--	--	--	--	--	8.34	--	--	NA	--	--	--	2.55	--	--	--	--	0.42	--	--	--	NA
OB-900	2004	--	--	--	--	--	--	--	20	NA	--	63	--	--	--	--	--	--	--	--	--	--	1.1
	1/24/2007	--	--	--	--	--	--	--	60	NA	--	--	--	0.57	4.1	56	--	--	0.96	--	--	3.33	NA
OB-901	2004	--	--	--	--	--		--	14	NA	--				13		--	--	--	--	--	--	5.1
	1/24/2007	--	--	--	--	--	--	--	13	NA	--	--	--	--	11	8.15	--	--	1.66	--	--	12	NA
OB-902	2004	--	--	--	--	--		--	--	NA	--			--	--	--	--	--	--	--	--	--	10
	1/24/2007	--	--	--	--	--	--	--	2.88	NA	--	--	--	0.39	6.83	17	--	--	0.36	--	--	5.2	NA
P-1	5/1/1986	14	--	44	--	--	--	--	--	NA	--	--	--	--	--	--	--	280	--	1200	--	--	NA
	2004	14	--	130	--	--	4300	--	--	NA	--	77	69	160	--	--	9	74	--	100	17	--	4.1
	1/26/2007	3.23	1.07	100	0.2	2.53	2600	1.02	1.08	NA	--	42	25	120	0.89	0.23	3.08	46	2.57	84	13	2.6	NA
P-2	2004	--	--	--	--	--	--	--	27	NA	--	--	--	--	45	--	--	--	--	--	--	42	17
	1/24/2007	--	--	--	--	--	4.51	--	91	NA	--	--	12	0.47	390	220	--	--	10	--	--	330	NA
P-3	2004	29	--	170	--	--	5700	--	--	NA	--	78	70	180	--	--	--	70	--	110	--	--	0.53
	1/26/2007	13	2.38	100	--	3.29	6200	0.76	1.5	NA	--	68	31	205	0.14	--	2.6	150	1.51	196.5	6.61	0.69	NA
PW-1	2004	--	--	--	--	--	--	--	23	NA	--	--	--	--	45	--	--	--	--	--	--	100	34
	1/26/2007	--	--	--	0.33	--	--	--	--	NA	--	--	--	4.69	--	--	--	--	0.85	0.55	--	--	NA
PW-2A	2004	--	--	--	--	--	--	--	56	NA	--	--	--	--	98	--	--	--	--	--	--	160	4.4
	1/24/2007	--	--	--	126	27.5	--	--	54	NA	--	14.5	--	--	900	1300	--	--	51.5	--	--	5700	NA
RIMW-1	1/26/2007	9.44	3.8	247	--	3.71	267	1.07	45	--	--	20	--	3600	0.54	2.58	24	2600	1.3	14000	34	3.18	6.1
RIMW-3	1/26/2007	124	1.77	640	--	0.36	13000	--	12	--	--	1.28	1.14	151	--	0.92	12	234	0.46	120	18	0.77	0.7
RIMW-4	1/26/2007	2.9	7.41	245	--	6.35	7800	1.43	31	6.1	--	110	31	1100	--	27	21	245	1.53	195	67	1.11	0.39
	1/26/2007	2.76	7.15	233	--	5.63	7800	0.55	30	--	--	110	28	1100	--	26	20	261	0.93	193	66	0.61	NA
RIMW-5	1/26/2007	30	6.86	349	--	8.03	52000	1.97	5.27	--	--	1.26	8.33	90	--	1.52	7.59	55	0.21	83	7.15	--	0.55
	1/26/2007	31	7.34	370	--	9.15	53000 J	2.72	5.69	--	--	1.64	8.74	93	--	1.52	8.06	56	0.2	88	7.86	--	NA
RIMW-6	1/25/2007	35	2.79	35	--	--	3.18	--	6.82	--	--	--	--	13000	3.39	2.64	0.97	880	75	710	1200	9.79	6
RIMW-7	1/25/2007	--	--	1.75	--	--	0.58	--	--	--	--	--	--	1.84	--	--	--	24	0.14	2.58	--	--	0.14
RIMW-8	1/26/2007	47000	146	7200	--	--	19000	--	58	19	--	530	2700	1506	3000	60	3700	892	52000	582	824	11000	12
	1/26/2007	47000	140	9000	--	--	19000	--	58	--	--	540	3000	1536	3000	64	3700	960	52000	580	844	11000	NA
RIMW-9	1/23/2007	--	--	5.07	--	--	--	--	--	--	--	0.54	--	14	--	--	--	66	0.17	17	--	--	0.052
	1/23/2007	--	--	6.48	--	0.26	--	--	--	--	--	0.58	--	20	--	--	--	70	0.16	23	--	--	NA
RIMW-10	1/23/2007	--	--	1.31	--	--	1100	--	--	--	--	--	11	190	--	--	0.96	96	--	87	7.26	--	0.42
RIMW-11	1/23/2007	--	--	2.3	--	--	0.41	--	--	--	--	0.28	46	73	--	--	0.39	220	--	31	--	--	0.032
RIMW-12	1/23/2007	7.73	--	1.12	--	--	--	--	--	--	--	--	--	3.66	--	--	--	1.88	0.77	1.42	0.45	--	0.04
RIMW-13	1/25/2007	--	--	0.22	--	--	0.79	--	--	7	--	--	--	1.22	--	--	--	--	0.12	--	--	--	0.047
RIMW-14	1/26/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.22	--	--	0.029
RIMW-15	1/25/2007	3.5	1.17	12	--	--	2.31	--	1.95	--	--	0.62	--	3000	--	--	--	880	5.6	700	166	--	0.098
	1/25/2007	3.28	1.2	11	--	--	2.06	--	1.76	--	--	--	--	2800	--	--	--	710	5.25	610	140	--	NA
	9/20/2007	--	--	2.23	--	--	1.26	--	--	--	--	--	--	730	--	--	--	4.76	--	610	0.64	--	NA
RIMW-16	1/25/2007	20	1.82	69	--	3.96	4.3	1.05	16	--	--	5.2	--	11000	1.64	3.28	0.92	13000	9.56	1900	1100	10	2.4
RIMW-18	12/16/2006	--	--	1.2	--	--	--	--	--	--	--	--	--	5.5	1.78	--	--	70	80	2.08	--	3.48	NA
	12/16/2006	--	--	2.14	--	--	--	--	--	--	--	--	--	6.06	1.15	--	--	93	36	2.32	--	2.28	NA
	1/23/2007	--	--	1.85	--	--	--	--	--	--	--	--	--	2.64	--	--	0.36	27	0.21	2.05	--	--	0.046
RIMW-19	12/19/2006	10	1.24	60	--	--	460	--	--	--	--	--	--	70	--	--	--	85	0.86	68	--	--	NA
	12/19/2006	8.92	1.24	56	--	0.56	3000	--	0.36	--	--	3.76	5.89	50	0.34	--	--	57	1.43	42	0.62	--	NA
	1/26/2007	8.66	1.56	45	--	--	28	--	--	--	--	--	--	69	--	--	--	64	0.59	48	--	--	0.022
RIMW-20	9/19/2007	--	--	--	--	--	--	--	--	NA	--	--	--	0.36	--	--	--	0.79	0.58	0.54	--	--	NA
RIMW-21	9/19/2007	--	--	--	--	--	--	--	--	NA	--	--	--		--	--	--	--	0.28	--	--	--	NA
RIMW-22	9/20/2007	--	--	0.86	--	--	--	--	--	NA	--	--	--	59	--	--	--	1.74	0.35	54	--	--	NA
RIMW-23	9/20/2007	--	--	--	--	--	--	--	--	NA	--	--	--	0.33	--	--	--	1.73	0.78	--	--	--	NA
RIMW-24	9/20/2007	--	--	27	--	--	1.17	--	0.44	NA	--	--	--	570	--	--	0.71	260	0.47	260	1.17	--	NA

Table 2
Summary of Groundwater Analytical Data
Phillips Services Corporation Site

Location	Sample Date	1,1,1-TCA (µg/l)	1,1,2-TCA (µg/l)	1,1-DCE (µg/l)	1,2,4-TCB (µg/l)	1,2-DCB (µg/l)	1,2-DCA (µg/l)	1,4-DCB (µg/l)	Benzene (µg/kg)	Bis(2-ethylhexyl)phthalate (µg/l)	Carbon tetrachloride (µg/l)	Chlorobenzene (µg/l)	Chloroethane (µg/l)	cis-1,2-DCE (µg/l)	Ethylbenzene (µg/l)	Isopropyl benzene (µg/l)	Methylene chloride (µg/l)	PCE (µg/l)	Toluene (µg/l)	TCE (µg/l)	Vinyl chloride (µg/l)	Xylenes (Total) (µg/l)	Manganese (mg/l)
MCL		**200**	**5**	**7**	**70**	**600**	**5**	**75**	**5**	**6**	**5**	**100**	**NSL**	**70**	**700**	**NSL**	**5**	**5**	**1000**	**5**	**2**	**10000**	**NSL**
RIMW-25	9/19/2007	720	30	510	--	49	3700	1.37	35	NA	--	2200	2300	1200	1000	40	1200	42	8500	84	740	3100	NA
	9/19/2007	770	36	540	--	58	4100	1.63	43	NA	--	2200	2500	1300	1000	50	1300	52	9700	100	800	3200	NA
RIMW-26	9/20/2007	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	0.41	0.72	--	--	--	NA
RIMW-27	9/20/2007	--	1.31	83	--	0.5	280		1.26	NA	--	--	--	--	--	--	--	400	--	--	--	--	NA
	9/20/2007	--	1.49	82	--	0.44	260		1.21	NA	--	6.11	2.92	800	--	--	0.96	400	0.32	370	15		NA
RIMW-28	9/19/2007	--	--	4.7	--	3.38	37	0.99	0.76	NA	--	14	3.24	19	4.53	--	1.02	3.21	41	6	2.64	7.17	NA
RIMW-29	9/19/2007	--	--	30	--	--	7.4		0.22	NA	--	--	--	370	--	--	0.5	81	0.26	260	4.01	--	NA
RIMW-30	9/19/2007	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	0.33	0.23	0.53	--	--	NA
RIPZ-3	1/24/2007	--	1.05	96	--	0.71	680		1.03	--	--	15	27	280	--	--	1.36	220	0.29	340	4.39	--	1.1
	1/24/2007	--	1.83	97	--	1.03	660	0.61	1.05	NA	--	15	27	290	0.21	--	1.42	220		330	4.36	0.93	NA
RITW-12	6/7/2006	--	--	89	--	--	--	--	410	NA	--	--	--	1200	710	--	--	1400	28000	82	40	2700	NA
RITW-28	6/1/2006	51000	154	6600	--	--	15000	--	69	NA	11000	123	--	235	3000	34	7900	428	51000	1200	--	10000	NA
RITW-34	6/7/2006	--	--	--	--	--	--	--	--	NA	--	--	--	24	--	--	--	--	0.96	3.45	1.8	0.41	NA
RITW-38	6/1/2006	--	--	130	--	--	1.14	--	2.39	NA	--	--	1.39	490	--	1.21		190	0.89	34	43	1.02	NA
RITW-64	1/24/2007	--	0.75	20	--	2.13	199.6	0.5	25	NA	--	1.88	7.1	930	8.17	0.42	16	1300	380	820	13	23	NA
RITW-65	1/24/2007	14	5.15	180	--	1.07	19	0.69	14	NA	--	2.35	47	1000	25	0.89	3.13	5500	820	246	1.08	81	NA
W-1	2004	3		23	--	--	--	--	--	NA	--	--	--	17	--	--	--	260	--	40	--	--	4.4
	1/25/2007	5.78	1.37	24	--	--	1.17	--	--	NA	--	--	--	31	--	--	--	160	--	17	--	--	NA
W-2	2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03
	1/23/2007	--	--	--	--	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA
W-4	2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	--
	1/25/2007	--	--	--	--	--	0.34	--	--	NA	--	--	--	--	--	--	--	--	0.11	--	--	--	NA

Notes:
-- = Constituent not detected at listed detection limit
J = Estimated concentration
(µg/l) = Micrograms per liter
(mg/l) = Milligrams per liter
NSL = No standard listed
NA = Not analyzed for this constituent
[ ] = indicates detection exceeds the SC DHEC Maximum Contamination Level (MCL)

Table 3
Well Construction Details
Phillip Services Corporation Site

Location ID	Water Bearing Zone	Hydraulic Zone	Year Installed	Construction	Screened Interval (ft bgs)	Total Depth (ft)	Measured Depth from TOC (ft)	Top of Casing Elevation (ft)
BP-1A	Shallow	PWR	1988	2" PVC	13.25 - 22.7	22.7	25.20	522.36
BP-1B	Shallow	PWR/Bedrock	1992	2" PVC	28 - 38	39	39.68	523.07
EW-1	Unknown	No Data	1988	OH with SS surface casing	Unknown		~64	524.52
EW-2	Shallow	PWR	1994	6" SS	45 - 65	66	65.00	528.66
EW-3	Deep	Bedrock	1994	6" SS casing to 25.5'; OH to 52'	25.5 - 52	52	52.00	520.46
EW-4	Unknown	No Data	Unknown	6" SS with OH	Unknown		78.40	527.51
MW-100	Shallow	Bedrock	1983	4" GS	32 - 37	37	41.60	529.37
MW-101	Shallow	PWR	1983	4" GS	24.5 - 29.5	29.5	32.00	529.28
MW-102	Shallow	Bedrock	1983	4" GS to 23.3'; OH 24-34'	24 - 34	34	36.10	530.64
MW-103	Shallow	PWR	1983	4" GS	23.5 - 28.5	28.5	31.14	522.49
MW-104	Shallow	PWR	1983	4" GS casing with SS screen	25 - 30	30	31.80	521.69
MW-105	Shallow	PWR	1983	4" GS	38 - 42	42	44.70	527.62
MW-106	Shallow	Saprolite/Bedrock	1983	2" PVC	22.5 - 27.5	27.5	20.42	524.09
MW-107	Shallow	PWR	1983	2" PVC	8.2 - 13.2	13.2	30.49	520.88
MW-108	Shallow	Bedrock	1983	2" PVC	13 - 18	18	21.38	517.27
MW-111	Shallow	Saprolite	1991	2" PVC	12.9 - 17.9	17.9	19.88	522.29
MW-112	Shallow	PWR	1991	2" PVC	11.2 - 16.2	16.2	17.22	521.44
MW-113A	Shallow	PWR	1991	2" PVC	12.2 - 17.2	17.2	20.08	523.71
MW-113B	Deep	PWR/Bedrock	1992	2" PVC	34 - 44	45	40.80	520.53
MW-114	Shallow	PWR	1990	2" PVC	8.2 - 13.2	13.2	14.85	522.25
MW-115A	Shallow	PWR	1992	2" PVC	5 - 11	12	14.16	518.8
MW-115B	Deep	PWR/Bedrock	1992	2" PVC	20 - 30	31	32.33	518.23
MW-116	Unknown	PWR/Bedrock	1992	2" PVC	12 - 22	23	24.10	523.76
MW-117	Unknown	Saprolite/Bedrock	1992	2" PVC	11 - 21	22	19.40	521.02
MW-118	Shallow	Saprolite	1992	2" PVC	5.5 - 15.5	16.5	15.70	522.64
MW-119	Shallow	PWR	1992	2" PVC	9 - 19.5	20.5	19.50	522.21
MW-120A	Shallow	PWR	1998	2" PVC Casing with SS screen	5 - 15	15	18.70	518.31
MW-120B	Deep	Bedrock	1998	2" PVC Casing with SS screen	24 - 34	35	38.28	517.4
MW-121B	Deep	Bedrock	1998	2" PVC Casing with SS screen	25 - 35	36	40.25	518.65
MW-122B	Deep	Bedrock	1998	2" PVC Casing with SS screen	25.5 - 35.5	36.5	39.42	519.65
MW-123A	Shallow	PWR	2000	2" SS	20 - 30		32.50	528.47
MW-123B	Unknown	Bedrock	2000	2" SS	39 - 49		51.90	528.39
OB-8A	Shallow	PWR	1985	2" SS	20.5 - 25.5	22.5?	25.70	525.47
OB-11	Shallow	Saprolite	1991	Unknown	? - 19	19	20.21	523.83
OB-12	Shallow	Saprolite	1991	Unknown	? - 18	18	20.00	524.25
OB-13	Shallow	Saprolite	1991	Unknown	13.2 - 18.2	18.2	19.90	unknown
OB-21	Shallow	PWR	1991	Unknown	? - 24.8	24.8	27.70	524.24
OB-22	Shallow	PWR	1991	Unknown	? - 24.7	24.7	27.35	524.15
OB-23	Shallow	PWR	1991	Unknown	? - 24.3	24.3	23.10	523.88
OB-109	Shallow	PWR	1985	2" SS	20 - 25	20?	28.02	531.97
OB-109B	Deep	Bedrock	1997	8" PVC to 32'; 2" to 51' with SS screen	51 - 61	62	60.80	529.71
OB-110A	Shallow	PWR	1985	2" GS casing with SS screen	25 - 30	19?	30.35	525.74
OB-110B	Deep	Bedrock	1986	1.5" PVC	130 - 135	135	132.10	524.93
OB-900	Shallow	No Data	Unknown	Unknown	Unknown		23.00	523.53
OB-901	Shallow	No Data	Unknown	Unknown	Unknown		22.20	522.55
OB-902	Shallow	No Data	Unknown	Unknown	Unknown		25.00	523.69
P-1	Shallow	Saprolite	1988	2" PVC	8.1 - 18.1	18.1	17.65	525.06
P-2	Shallow	Saprolite	1988	2" PVC	9.5 - 19.5	20	20.00	523.32
P-3	Deep	PWR	1988	2" PVC	27.9 - 32.8	32.8	34.82	525.45
PW-1	Unknown	No Data	1979	6" SS	Unknown		166.50	530.52

Table 3
Well Construction Details
Phillip Services Corporation Site

Location ID	Water Bearing Zone	Hydraulic Zone	Year Installed	Construction	Screened Interval (ft bgs)	Total Depth (ft)	Measured Depth from TOC (ft)	Top of Casing Elevation (ft)
PW-1A	Shallow	No Data	1991	Unknown	? - 22.7	22.7	26.88	526.17
PW-2	Unknown	No Data	1981	Unknown	Unknown		> 202	535.21
PW-2A	Shallow	PWR/Bedrock	1991	Unknown	? - 29.6	29.6	32.40	525.2
PW-3	Unknown	No data	1987	4" PVC to 35'; 6.5" OH to 129'; OH with 1 or 2" PVC to 187'	129 - 187		187.00	525.21
RIMW-1	Shallow	PWR	2006	2" PVC	19-29		30	530.64
RIMW-3	Shallow	PWR	2006	2" PVC	24-34		35	531.09
RIMW-4	Shallow	PWR	2006	2" PVC	20-30		31	528.59
RIMW-5	Shallow	PWR	2006	2" PVC	16-26		26.5	531.21
RIMW-6	Shallow	PWR	2006	2" PVC	20-30		31	525.54
RIMW-7	Shallow	PWR	2006	2" PVC	19-29		30	536.06
RIMW-8	Shallow	PWR	2006	2" PVC	16-26		27	529.92
RIMW-9	Shallow	Saprolite	2006	2" PVC	12-22		23	523.81
RIMW-10	Shallow	PWR	2006	2" PVC	27-37		38	528.79
RIMW-11	Shallow	Saprolite	2006	2" PVC	16-26		27	531.44
RIMW-12	Shallow	PWR	2006	2" PVC	25-35		36	528.43
RIMW-13	Deep	Bedrock	2006	6" steel casing to 37', 2" PVC to 82'	72-82		83	535.82
RIMW-14	Deep	Bedrock	2006	6" steel casing to 46', 2" PVC to 75'	65-75		76.5	529.1
RIMW-15	Deep	Deep PWR	2006	2" PVC	70-100		102.5	525.64
RIMW-16	Shallow	PWR	2006	2" PVC	45-55		56	525.73
RIMW-18	Deep	Bedrock	2006	6" steel casing to 40', 2" PVC to 55.5'	45.5-55.5		56.5	531.38
RIMW-19	Deep	Bedrock	2006	6" steel casing to 55', 2" PVC to 80'	70-80		81	528.84
RIMW-20	Deep	Bedrock	2007	6" steel casing to 100', 2" PVC to 120'	104.6-119.6		119.57	519.6
RIMW-21	Deep	Bedrock	2007	6" steel casing to 70', 2" PVC to 88'	77.3-87.3		87.57	517.06
RIMW-22	Deep	Bedrock	2007	6" steel casing to 117', 2" PVC to 135'	124.9-134.9		135.20	525.78
RIMW-23	Deep	Bedrock	2007	6" steel casing to 37', 2" PVC to 58'	45.8-57.8		57.88	521.9
RIMW-24	Shallow	Saprolite	2007	2" PVC	15-25		25.00	521.73
RIMW-25	Deep	Bedrock	2007	6" steel casing to 40', 2" PVC to 55'	44.7-54.7		54.76	525.79
RIMW-26	Deep	Bedrock	2007	6" steel casing to 71', 2" PVC to 94'	83.2-93.2		93.37	521.34
RIMW-27	Shallow	PWR	2007	6" steel casing to 69', 2" PVC to 87'	76-86		87.00	522.24
RIMW-28	Deep	Bedrock	2007	6" steel casing to 46', 2" PVC to 67'	56.4-66.4		66.52	525.27
RIMW-29	Deep	Bedrock	2007	6" steel casing to 47', 2" PVC to 64'	54-64		63.83	520.39
RIMW-30	Shallow	PWR	2007	2" PVC	82-92		92.00	519.53
RIPZ-1	Shallow	Alluvium	2006	1" PVC	3-8		9	*516.31*
RIPZ-2	Deep	Bedrock	2006	4" PVC to 38', 1" PVC to 73'	63-73		74	*519.12*
RIPZ-3	Shallow	PWR	2006	6" Steel casing to 35', 1" PVC to 44.5	39.5-44.5		46	*522.91*
W-1	Shallow	PWR	1981	4" PVC	24 - 29		29.90	536.99
W-2	Shallow	PWR	1981	4" PVC	15 - 20		22.70	528.81
W-3	Unknown	No Data	1981	4" PVC	20 - 25		27.30	*522.80*
W-4	Shallow	Saprolite	1981	4" PVC	15 - 20		22.25	517.63

Notes:
GS - Galvanized Steel
OH - Open Hole
PVC - Polyvinyl Chloride
SS - Stainless Steel
Table information originates from 2007 RI completed by CDM. Top of casing elevations were corrected in 2011. Where information could not be obtained from an available source, "Unknown" was used.
Water bearing zone designations are historically provided by CDM in the 2007 RI.
522.80 = italic top of casing elevations are not corrected with the 2011 professional survey data.
(shaded) = monitoring well abandoned

Table 4
Historical Groundwater Elevation Data
Phillips Services Corporation Site

Well ID	Gauging Date	Top of Casing Elevation (ft)	Depth to Product (ft btoc)	Depth to Water (ft btoc)	Product Thickness (ft)	Water Elevation (ft)
BP-1A	2007	522.36	ND	15.38	ND	506.98
BP-1B	2007	523.07	ND	16.32	ND	506.75
EW-1	2007	524.52	14.76	14.95	0.19	509.71
EW-2	2007	528.66	Active Pumping Well			
EW-3	2007	520.46	Active Pumping Well			
EW-4	2007	527.51	ND	16.95	ND	510.56
MW-100	2007	529.37	ND	19.61	ND	509.76
MW-101	2007	529.28	ND	17.79	ND	511.49
MW-102	2007	530.64	ND	19.16	ND	511.48
MW-103	2007	522.49	ND	13.8	ND	508.69
MW-104	2007	521.69	ND	13.28	ND	508.41
MW-105	2007	527.62	ND	20.89	ND	506.73
MW-106	2007	524.09	ND	15.75	ND	508.34
MW-107	2007	520.88	ND	12.56	ND	508.32
MW-108	2007	517.27	ND	10.25	ND	507.02
MW-111	2007	522.29	ND	15.58	ND	506.71
MW-112	2007	521.44	ND	14.46	ND	506.98
MW-113A	2007	523.71	ND	16.51	ND	507.20
MW-113B	2007	520.53	ND	14.42	ND	506.11
MW-114	2007	522.25	Dry			
MW-115A	2007	518.8	ND	12.17	ND	506.63
MW-115B	2007	518.23	ND	11.31	ND	506.92
MW-118	2007	522.64	ND	15.48	ND	507.16
MW-119	2007	522.21	ND	14.42	ND	507.79
MW-120A	2007	518.31	ND	11.79	ND	506.52
MW-120B	2007	517.4	ND	10.74	ND	506.66
MW-121B	2007	518.65	ND	11.69	ND	506.96
MW-122B	2007	519.65	ND	12.33	ND	507.32
MW-123A	2007	528.47	ND	18.46	ND	510.01
OB-8A	2007	525.47	ND	15.37	ND	510.10
OB-11	2007	523.83	16.01	16.25	0.24	507.76
OB-22	2007	524.15	16.17	16.43	0.26	507.91
OB-109	2007	531.97	ND	21.92	ND	510.05
OB-109B	2007	529.71	ND	19.68	ND	510.03
OB-110A	2007	525.74	ND	15.96	ND	509.78
OB-110B	2007	524.93	ND	16.27	ND	508.66
P-1	2007	525.06	ND	15.35	ND	509.71
P-2	2007	523.32	15.19	16.21	1.02	507.85
P-3	2007	525.45	ND	15.7	ND	509.75
PW-1	2007	530.52	ND	20.13	ND	510.39
PW-1A	2007	526.17	18.13	21.56	3.43	507.11

Table 4
Historical Groundwater Elevation Data
Phillips Services Corporation Site

Well ID	Gauging Date	Top of Casing Elevation (ft)	Depth to Product (ft btoc)	Depth to Water (ft btoc)	Product Thickness (ft)	Water Elevation (ft)
PW-2	2007	535.21	Well Not Found			
PW-3	2007	525.21	Well Not Found			
RIMW-1	2007	530.64	ND	19.63	ND	511.01
RIMW-3	2007	531.09	ND	19.21	ND	511.88
RIMW-4	2007	528.59	ND	18.5	ND	510.09
RIMW-5	2007	531.21	ND	20.31	ND	510.90
RIMW-6	2007	525.54	ND	15.98	ND	509.56
RIMW-7	2007	536.06	ND	23.42	ND	512.64
RIMW-8	2007	529.92	ND	19.48	ND	510.44
RIMW-9	2007	523.81	ND	15.11	ND	508.70
RIMW-10	2007	528.79	ND	20.91	ND	507.88
RIMW-11	2007	531.44	ND	17.39	ND	514.05
RIMW-12	2007	528.43	ND	18.03	ND	510.40
RIMW-13	2007	535.82	ND	21.85	ND	513.97
RIMW-14	2007	529.1	ND	19.44	ND	509.66
RIMW-15	2007	525.64	ND	16.38	ND	509.26
RIMW-16	2007	525.73	ND	16.26	ND	509.47
RIMW-18	2007	531.38	ND	15.75	ND	515.63
RIMW-19	2007	528.84	ND	18.86	ND	509.98
RIMW-20	2007	519.6	ND	9.96	ND	509.64
RIMW-21	2007	517.06	ND	5.28	ND	511.78
RIMW-22	2007	525.78	ND	16.36	ND	509.42
RIMW-23	2007	521.9	ND	14.05	ND	507.85
RIMW-24	2007	521.73	ND	14.21	ND	507.52
RIMW-25	2007	525.79	ND	15.66	ND	510.13
RIMW-26	2007	521.34	ND	11.91	ND	509.43
RIMW-27	2007	522.24	ND	14.81	ND	507.43
RIMW-28*	2007	525.27	ND	26.42	ND	498.85
RIMW-29	2007	520.39	ND	13.37	ND	507.02
RIMW-30	2007	519.53	ND	10.13	ND	509.40
RIPZ-1	2007	*516.31*	Dry			
RIPZ-2	2007	*519.12*	ND	10.98	ND	508.14
RIPZ-3	2007	*522.91*	ND	14.57	ND	508.34
W-1	2007	536.99	ND	24.57	ND	512.42
W-2	2007	528.81	ND	21.9	ND	506.91
W-3	2007	*522.80*	Well Not Found			
W-4	2007	517.63	ND	9.35	ND	508.28

Notes:

*RIMW-28 water elevation was approximately 10 feet below surrounding wells.
The well had not likely fully recharged since being installed.

Table information originates from 2007 RI completed by CDM. Top of casing elevations were corrected in 2011.

522.80 = italic top of casing elevations are not corrected with the 2011 professional survey data.

Table 5
Proposed Soil Boring Locations
Phillip Services Corporation Site

Soil Boring Location	Drilling Method	Rationale
SB-68	Rotosonic	Soil borings will be installed and COCs analyzed to provide better definition of the source area in the north eastern portion of the plume.
SB-69		
SB-70		
SB-71		
SB-72		
SB-73		
SB-74		
SB-75		Soil borings will be installed to better define the extent of source area soil COCs between existing borings RISB-65 and RISB-11.
SB-76		
SB-77		
SB-78		
SB-79		Soil boring will be installed to determine if the source area soil COCs extend outside the footprint of the building to the west of RISB-18.
SB-80		Soil borings will be installed to better define the extent of source area soil COCSs around existing soil borings RISB-56 and RISB-49. Due to the comingled COCs in this area, soil borings along with LIF will help determine the limits of source soils in this proposed treatment zone.
SB-81		
SB-82		
SB-83		
SB-84		Soil borings will be installed to help determine the bounds of soils exceeding RSLs near RISB-57 and RISB-25 for proposed treatment
SB-85		
SB-86		Soil borings will be installed in the area of the former Burn Pit to determine if a soil source exists.
SB-87		
SB-88	Direct Push/ Geoprobe	Vadose zone soil borings to further define the extent of source area soils. Borings will be eliminated if rotosonic borings indicate the extent of soil contamination is defined.
SB-89		
SB-90		
SB-91		
SB-92		
SB-93		Vadose zone soil borings to further define the extent of source area soils in suspected LNAPL area
SB-94		
SB-95		Vadose zone soil borings to further define the extent of source area soils. Borings will be eliminated if rotosonic borings indicate the extent of soil contamination is defined.
SB-96		
SB-97		Vadose zone soil borings in former Burn Pit area. Soil borings will be utilized to determine the extent of a soil source aea if rotosonic borings indicate a source.
SB-98		
SB-99		

Notes:
See Figures 14 and 15 of the *Preliminary Design Investigation Work Plan* for soil boring locations.

Table 6
Final COCs
Phillips Services Corporation Site

Soil Constituents of Concern
VOCs
1,1,1-Trichloroethane
1,1,2-Trichloroethane
1,2-Dichloroethene
1,2,4-Trichlorobenzene
1,2-Dichloroethane
1,4-Dichlorobenzene
Acetone
Benzene
Chlorobenzene
cis-1,2-Dichloroethane
Ethylbenzene
Methylene chloride
Tetrachloroethane
Toluene
Trichloroethene
Vinyl chloride
Xylenes (Total)
SVOCs
N-Nitrosodiphenylamine
Metals
Arsenic
Barium
Chromium
Iron
Manganese
Nickel
Selenium
Thallium
Vanadium

Groundwater Constituents of Concern
VOCs
1,1,1-Trichloroethane
1,1,2-Trichloroethane
1,1-Dichloroethene
1,2,4-Trichlorobenzene
1,2-Dichlorobenzene
1,2-Dichloroethane
1,4-Dichlorobenzene
Benzene
Bis(2-ethylhexyl)phthalate
Carbon Tetrachloride
Chlorobenzene
cis-1,2-Dichloroethene
Ethylbenzene
Isopropylbenzene
Methylene chloride
Tetrachloroethene
Toluene
Trichloroethene
Vinyl chloride
Xylenes (total)
Metals
Manganese

Notes:
VOCs - Volatile Organic Compounds
SVOCs - Semi-Volatile Organic Compounds
2011 Feasibility Study Final COCs (CDM, 2011)

FIGURES

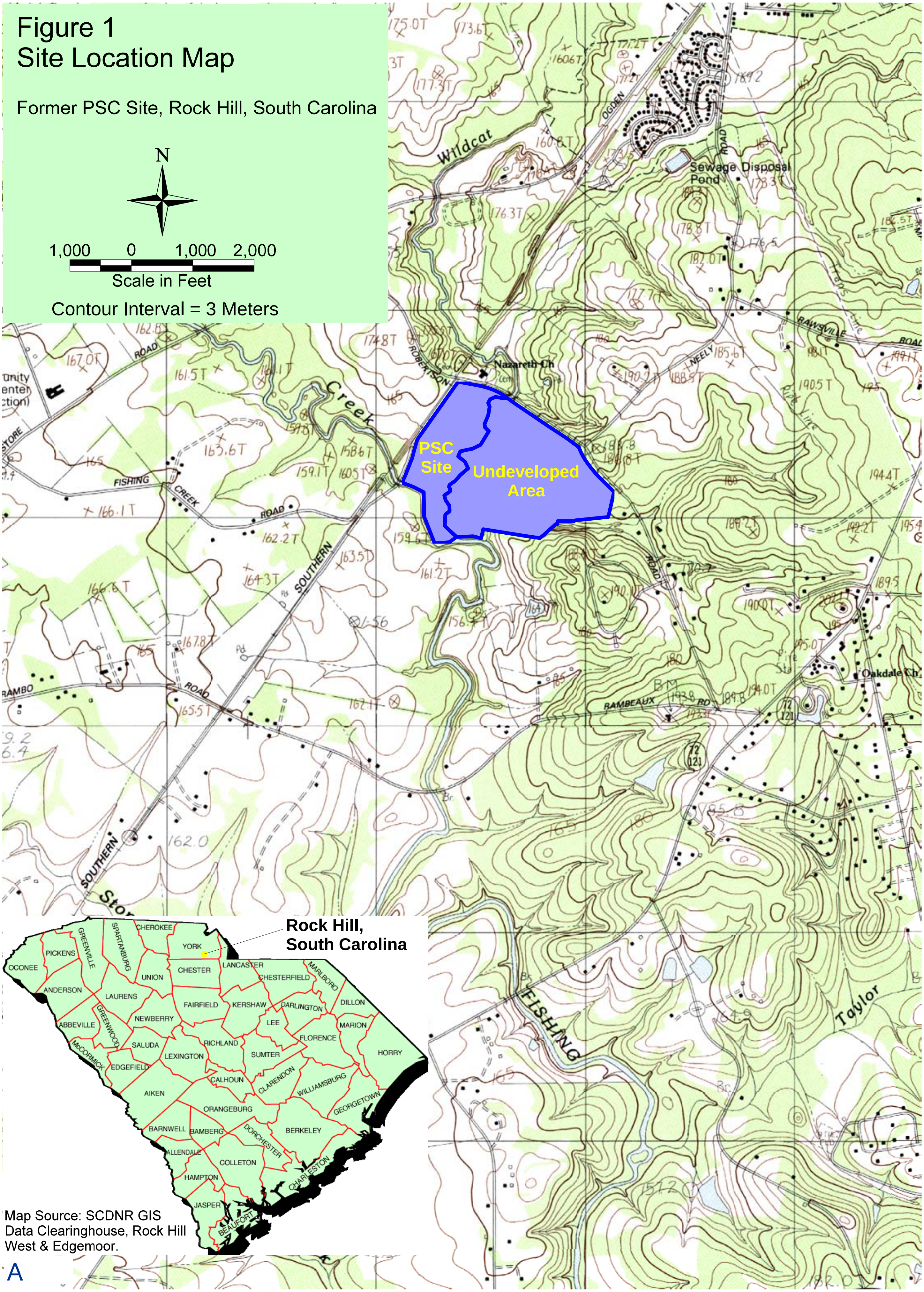
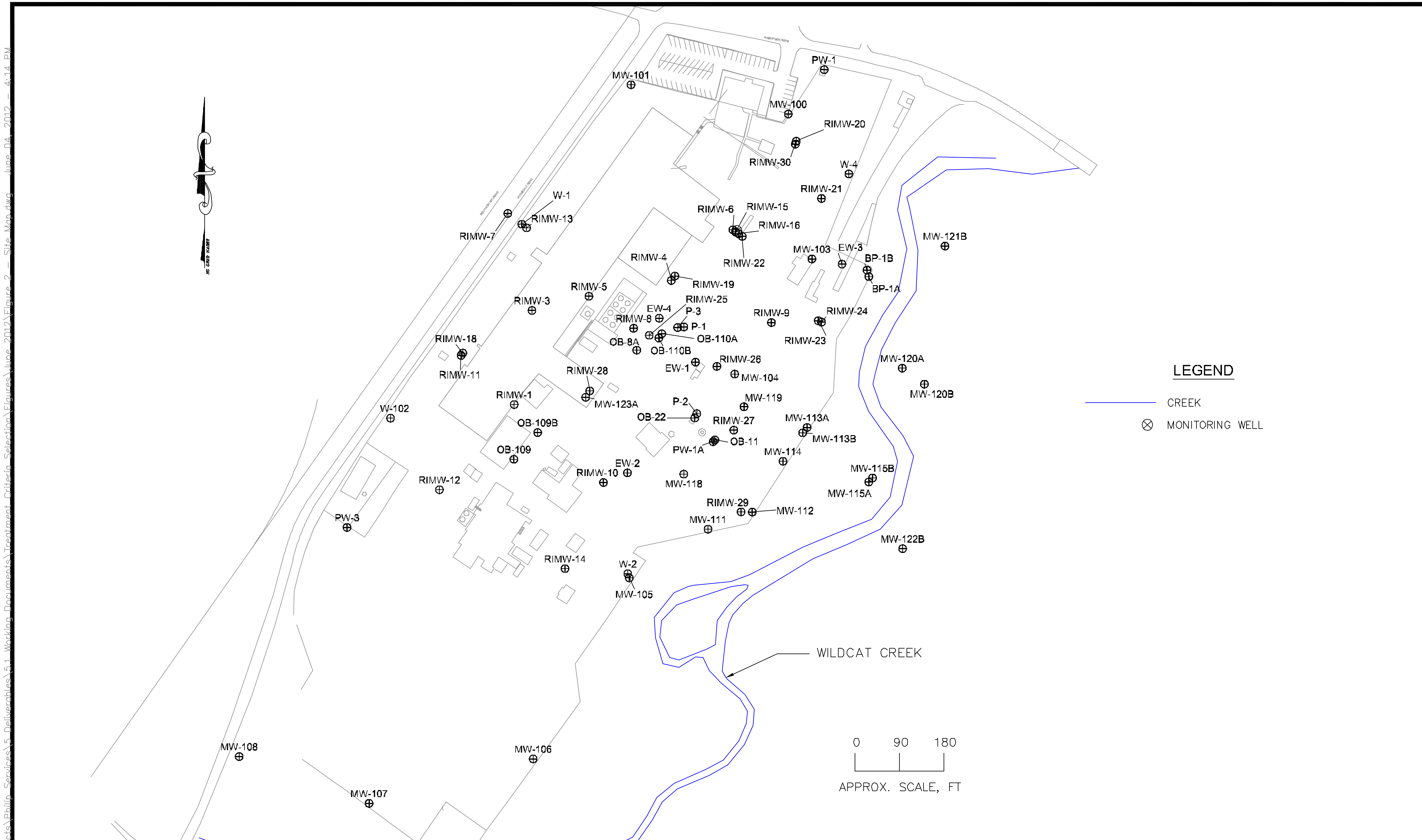


Figure 1
Site Location Map

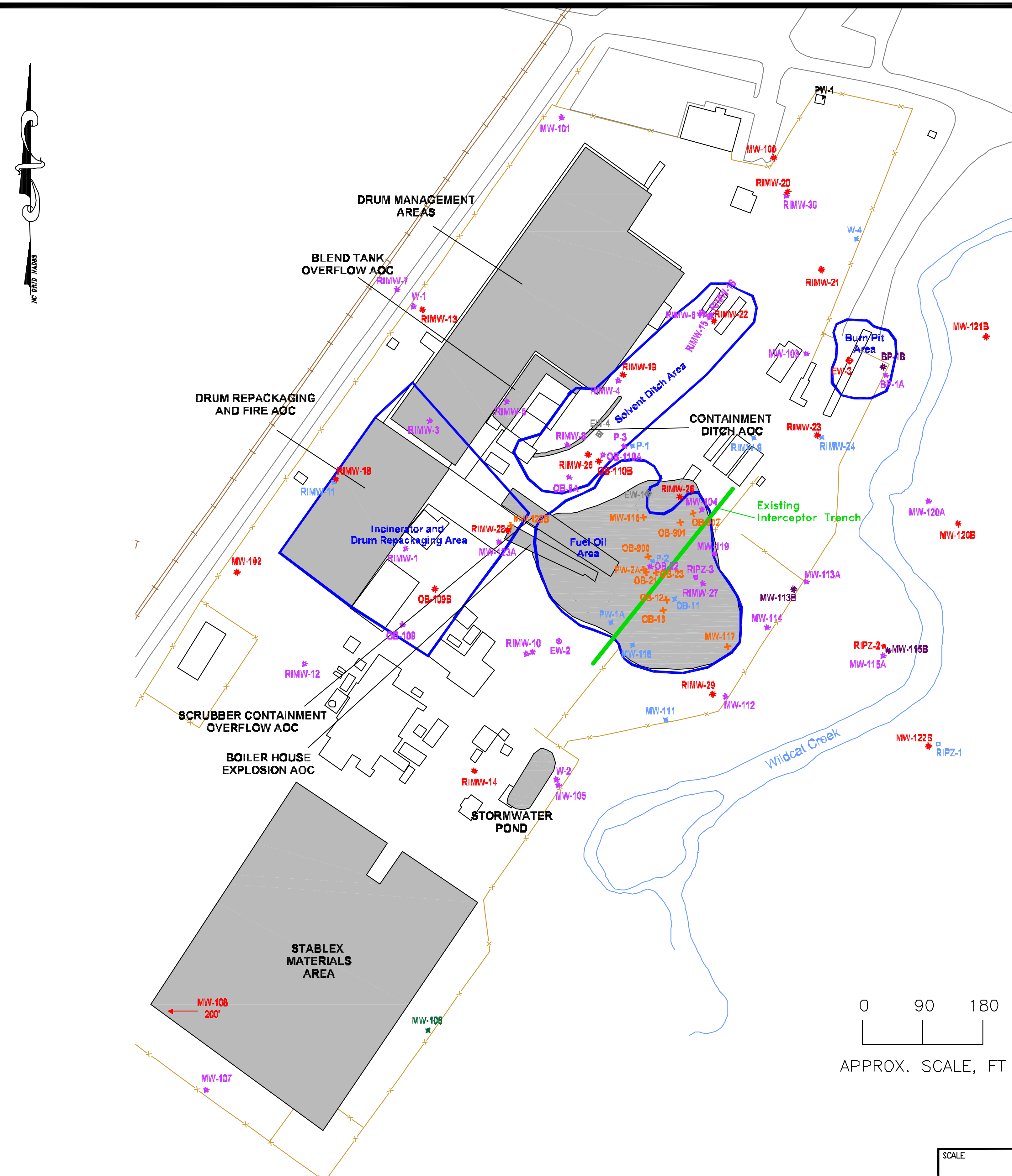
Former PSC Site, Rock Hill, South Carolina

A

P:\Common_Projects\Philip_Services\5_Deliverables\5.1_Working_Documents\Treatment_Criteria_Selection\Figures\June_2012\Figure_2 - Site_Map.dwg June 04, 2012 - 4:14 PM



SCALE AS SHOWN	DESIGNED BY	DATE	Site Map Former PSC Site, Rock Hill, South Carolina		
CONFIDENTIAL–ALL RIGHTS RESERVED–PROPERTY OF URS RDU, NORTH CAROLINA 27560	DRAWN BY TSH	DATE 04JUN12			
	CHECKED BY AMT	DATE 04JUN12	CONTRACT NO.	DRAWING NO.	REV.
	APPROVED BY AMT	DATE 04JUN12	31827295	FIGURE–2	0



0 90 180

APPROX. SCALE, FT

Legend

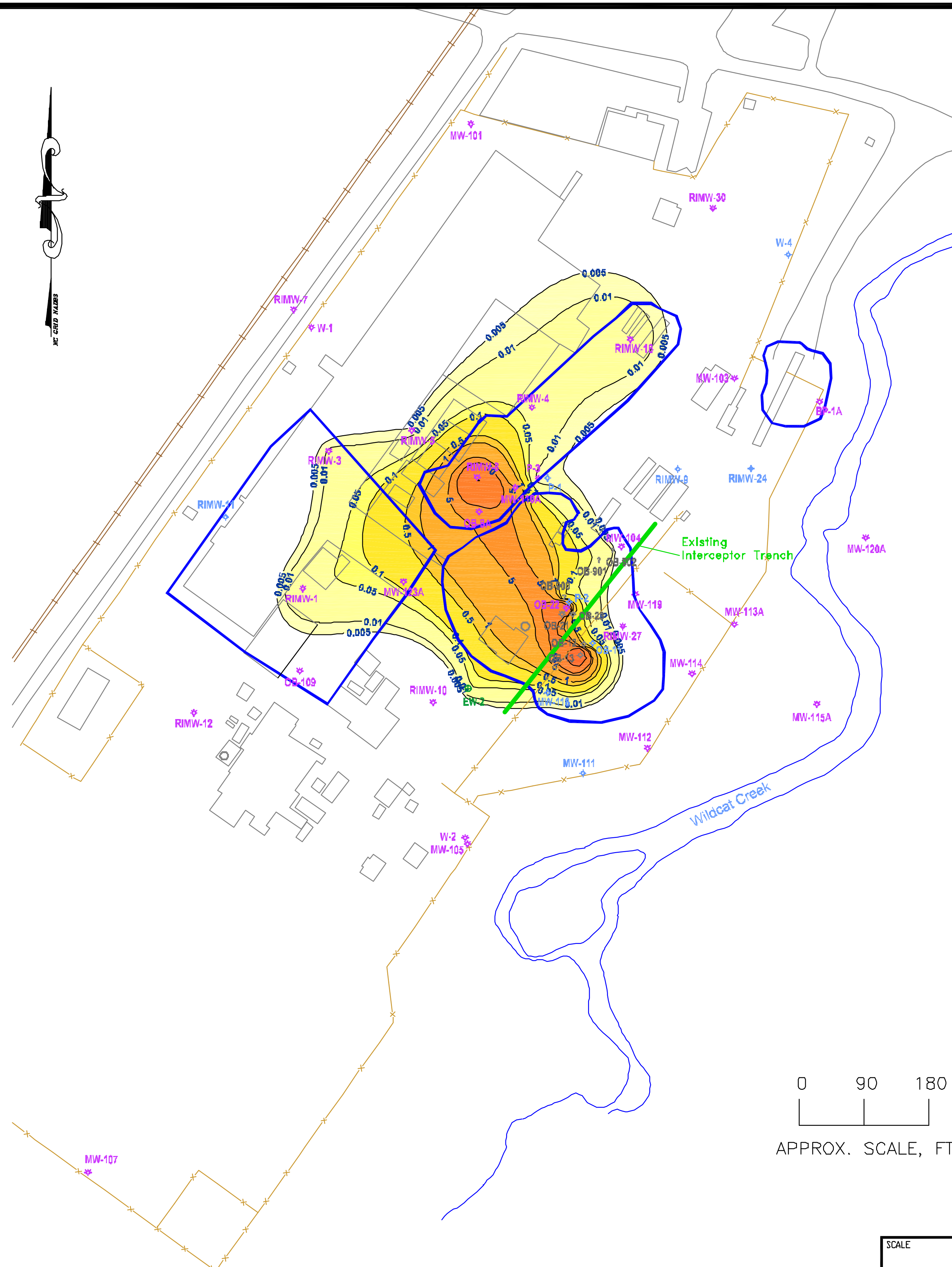
- ? Pre-RI Unknown Well
- Shallow Piezometer
- PWR Piezometer
- Bedrock Piezometer
- Saprolite Well
- PWR Well
- Bedrock Well
- Saprolite / Bedrock Well
- PWR / Bedrock Well
- Abandoned Well
- GW Area of Concern
- Previously Identified AOC and SWMU areas
- Unknown Extraction Well
- PWR Extraction Well
- Bedrock Extraction Well

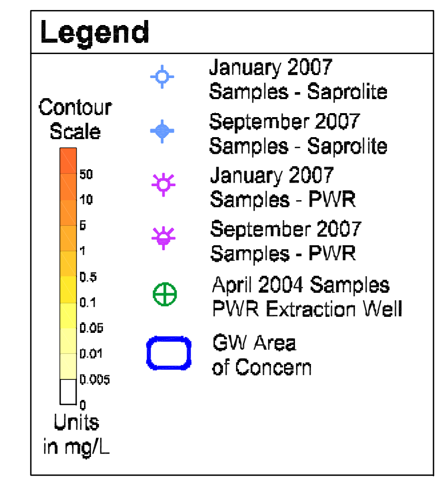
NOTE:
Figure is created from data in the 2008 RI prepared and submitted by CDM.

SCALE	DESIGNED BY	DATE	
AS SHOWN			Groundwater Areas of Concern Former PSC Site, Rock Hill, South Carolina
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS RDU, NORTH CAROLINA 27560	DRAWN BY TSH	DATE 04JUN12	
	CHECKED BY AMT	DATE 04JUN12	CONTRACT NO. 31827295 / DRAWING NO. FIGURE-3 / REV. 0
	APPROVED BY AMT	DATE 04JUN12	

Well ID	Sample Date	BTEX Total (mg/L)
BP-1A	Jan-07	<0.001
EW-2	Apr-04	0.045
MW-101	Jan-07	<0.001
MW-103	Jan-07	<0.001
MW-104	Jan-07	<0.001
MW-105	Jan-07	<0.001
MW-107	Jan-07	BDL
MW-111	Jan-07	BDL
MW-112	Jan-07	BDL
MW-113A	Jan-07	<0.001
MW-114	Jan-07	BDL
MW-115A	Jan-07	<0.001
MW-118	Jan-07	0.025
MW-119	Jan-07	<0.001
MW-120A	Jan-07	BDL
MW-123A	Jan-07	0.13
OB-109	Jan-07	<0.001
OB-11	Jan-07	0.17
OB-110A	Jan-07	4.9
OB-12	Jan-07	0.30
OB-13	Jan-07	740
OB-21	Jan-07	21
OB-22	Jan-07	200
OB-23	Jan-07	0.34
OB-8A	Jan-07	6.5
OB-900	Jan-07	0.068
OB-901	Jan-07	0.038
OB-902	Jan-07	0.015
P-1	Jan-07	0.007
P-2	Jan-07	0.82
P-3	Jan-07	0.004
RIMW 1	Jan-07	0.050
RIMW 10	Jan-07	BDL
RIMW 11	Jan-07	BDL
RIMW 12	Jan-07	<0.001
RIMW 16	Jan-07	0.037
RIMW 3	Jan-07	0.013
RIMW 4	Jan-07	0.034
RIMW 5	Jan-07	0.005
RIMW 7	Jan-07	<0.001
RIMW 8	Jan-07	66
RIMW 9	Jan-07	<0.001
RIMW-24	Sep-07	<0.001
RIMW-27	Sep-07	0.002
RIMW-30	Sep-07	<0.001
W-1	Jan-07	BDL
W-2	Jan-07	BDL
W-4	Jan-07	<0.001

Total BTEX includes:
Benzene, Toluene,
Ethylbenzene, and Xylenes
BDL - Below Detection Limit



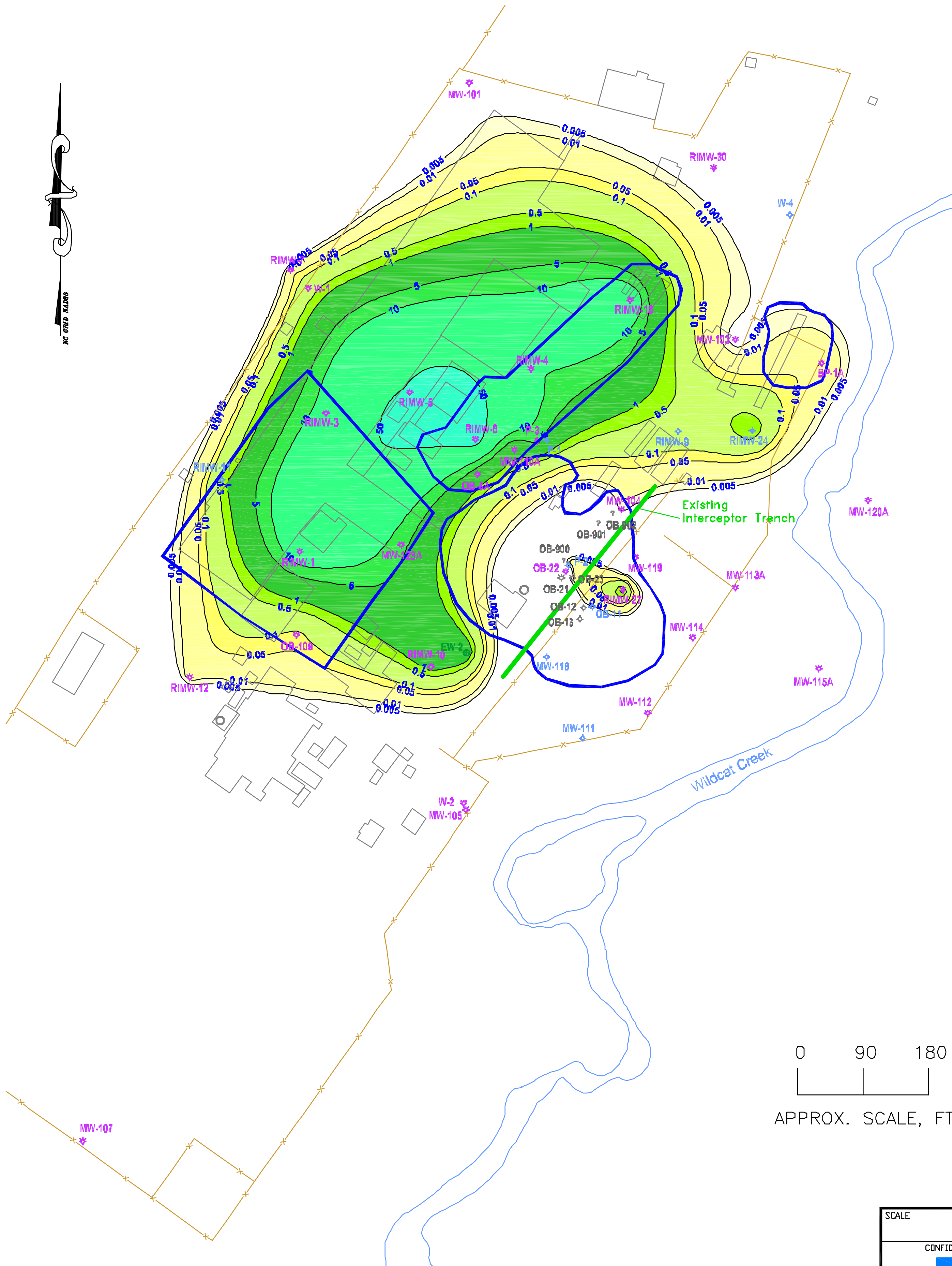


NOTE:
Figure is created from data in the 2008 RI prepared and submitted by CDM.

SCALE AS SHOWN	DESIGNED BY	DATE	BTEX Concentrations in Regolith Groundwater Former PSC Site, Rock Hill, South Carolina
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS, RDU, NORTH CAROLINA 27560	DRAWN BY TSH	DATE 04JUN12	
	CHECKED BY AMT	DATE 04JUN12	CONTRACT NO. 31827295
	APPROVED BY AMT	DATE 04JUN12	DRAWING NO. FIGURE-4 / REV. 0

Well ID	Sample Date	Total Chlorinated Ethenes/Ethanes (mg/L)
BP-1A	Jan-07	0.053
EW-2	Apr-04	3.0
MW-101	Jan-07	0.002
MW-103	Jan-07	0.002
MW-104	Jan-07	0.008
MW-105	Jan-07	<0.001
MW-107	Jan-07	BDL
MW-111	Jan-07	BDL
MW-112	Jan-07	BDL
MW-113A	Jan-07	BDL
MW-114	Jan-07	BDL
MW-115A	Jan-07	BDL
MW-118	Jan-07	BDL
MW-119	Jan-07	BDL
MW-120A	Jan-07	BDL
MW-123A	Jan-07	6.3
OB-109	Jan-07	0.067
OB-11	Jan-07	0.004
OB-110A	Jan-07	1.7
OB-12	Jan-07	0.002
OB-13	Jan-07	BDL
OB-21	Jan-07	BDL
OB-22	Jan-07	BDL
OB-23	Jan-07	0.018
OB-8A	Jan-07	2.5
OB-900	Jan-07	<0.001
OB-901	Jan-07	BDL
OB-902	Jan-07	<0.001
P-1	Jan-07	3.1
P-2	Jan-07	0.018
P-3	Jan-07	6.9
RIMW 1	Jan-07	21
RIMW 10	Jan-07	1.5
RIMW 11	Jan-07	0.68
RIMW 12	Jan-07	0.016
RIMW 16	Jan-07	27
RIMW 3	Jan-07	14
RIMW 4	Jan-07	10
RIMW 5	Jan-07	53
RIMW 7	Jan-07	0.032
RIMW 8	Jan-07	89
RIMW 9	Jan-07	0.24
RIMW-24	Sep-07	1.1
RIMW-27	Sep-07	2.0
RIMW-30	Sep-07	<0.001
W-1	Jan-07	0.25
W-2	Jan-07	BDL
W-4	Jan-07	<0.001

Total Chlorinated Ethenes/Ethanes include:
Chloroethane, 1,1-Dichloroethane,
1,1-Dichloroethene, 1,2-Dichloroethane,
cis-1,2-Dichloroethene, 1,1,1-Trichloroethane,
Tetrachloroethene, 1,1,2,2-Tetrachloroethane,
Trichloroethene, 1,1,2-Trichloroethane,
and Vinyl Chloride
BDL - Below Detection Limit



Legend

Contour Scale
60
10
5
1
0.5
0.1
0.05
0.01
0.005
0
Units in mg/L

- January 2007 Samples - Saprolite
- September 2007 Samples - Saprolite
- January 2007 Samples - PWR
- September 2007 Samples - PWR
- April 2004 Samples PWR Extraction Well
- GW Area of Concern

0 90 180
APPROX. SCALE, FT

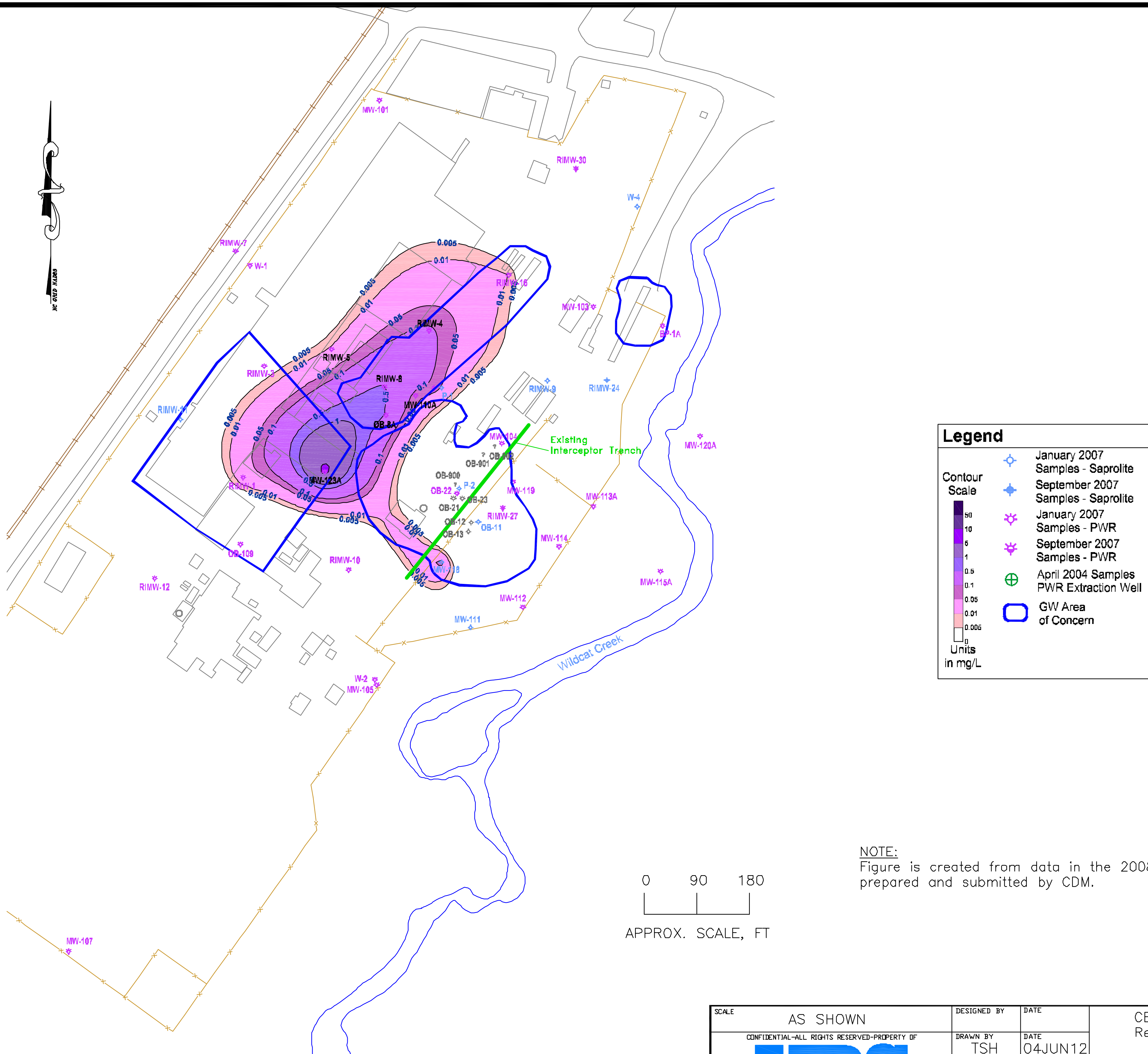
NOTE:
Figure is created from data in the 2008 RI prepared and submitted by CDM.

SCALE	DESIGNED BY	DATE	
AS SHOWN			CEE Concentrations in Regolith Groundwater Former PSC Site, Rock Hill, South Carolina
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS RDU, NORTH CAROLINA 27560	DRAWN BY TSH	DATE 04JUN12	
	CHECKED BY AMT	DATE 04JUN12	CONTRACT NO. 31827295 / DRAWING NO. FIGURE-5 / REV. 0
	APPROVED BY AMT	DATE 04JUN12	

P:\Common Projects\Philip Services\5 Deliverables\51 Working Documents\Treatment Criteria Selection\Figures\June 2012\Figure 5 - Total CEE in Regolith.dwg July

Well ID	Sample Date	Total Chlorinated Benzenes (mg/L)
BP-1A	Jan-07	0.002
EW-2	Apr-04	0.23
MW-101	Jan-07	<0.001
MW-103	Jan-07	BDL
MW-104	Jan-07	BDL
MW-105	Jan-07	0.003
MW-107	Jan-07	BDL
MW-111	Jan-07	<0.001
MW-112	Jan-07	BDL
MW-113A	Jan-07	BDL
MW-114	Jan-07	BDL
MW-115A	Jan-07	BDL
MW-118	Jan-07	0.07
MW-119	Jan-07	BDL
MW-120A	Jan-07	BDL
MW-123A	Jan-07	6.9
OB-109	Jan-07	BDL
OB-11	Jan-07	BDL
OB-110A	Jan-07	0.07
OB-12	Jan-07	BDL
OB-13	Jan-07	BDL
OB-21	Jan-07	BDL
OB-22	Jan-07	BDL
OB-23	Jan-07	0.001
OB-8A	Jan-07	0.47
OB-900	Jan-07	BDL
OB-901	Jan-07	BDL
OB-902	Jan-07	BDL
P-1	Jan-07	0.046
P-2	Jan-07	BDL
P-3	Jan-07	0.072
RIMW 1	Jan-07	0.025
RIMW 10	Jan-07	BDL
RIMW 11	Jan-07	<0.001
RIMW 12	Jan-07	BDL
RIMW 16	Jan-07	0.010
RIMW 3	Jan-07	0.002
RIMW 4	Jan-07	0.12
RIMW 5	Jan-07	0.012
RIMW 7	Jan-07	<0.001
RIMW 8	Jan-07	0.54
RIMW 9	Jan-07	<0.001
RIMW-24	Sep-07	BDL
RIMW-27	Sep-07	0.007
RIMW-30	Sep-07	BDL
W-1	Jan-07	BDL
W-2	Jan-07	BDL
W-4	Jan-07	BDL

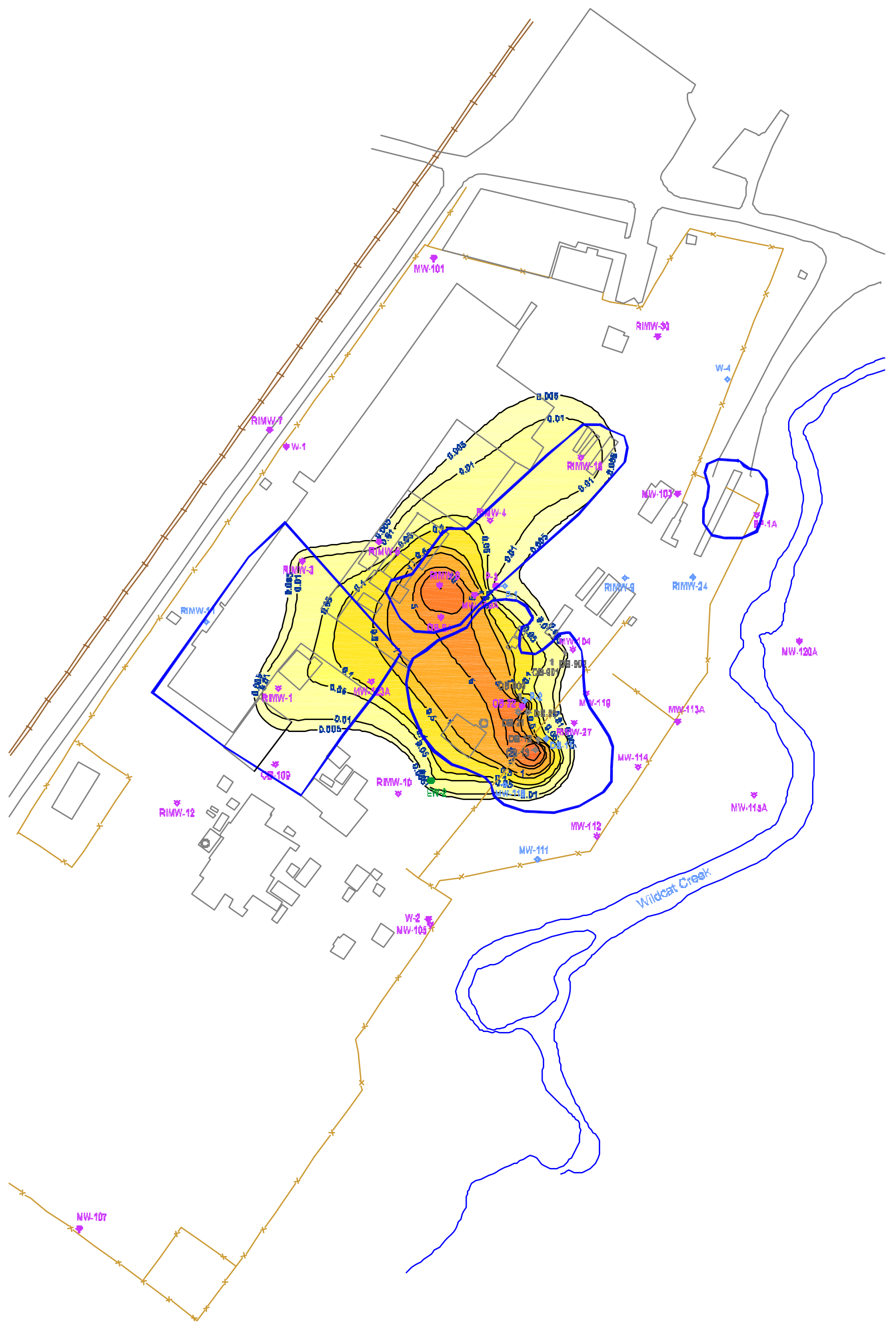
Total Chlorinated Benzenes include:
1,2-Dichlorobenzene, 1,3-Dichlorobenzene,
1,4-Dichlorobenzene, 1,2,3-Trichlorobenzene,
1,2,4-Trichlorobenzene, and Chlorobenzene
BDL - Below Detection Limit



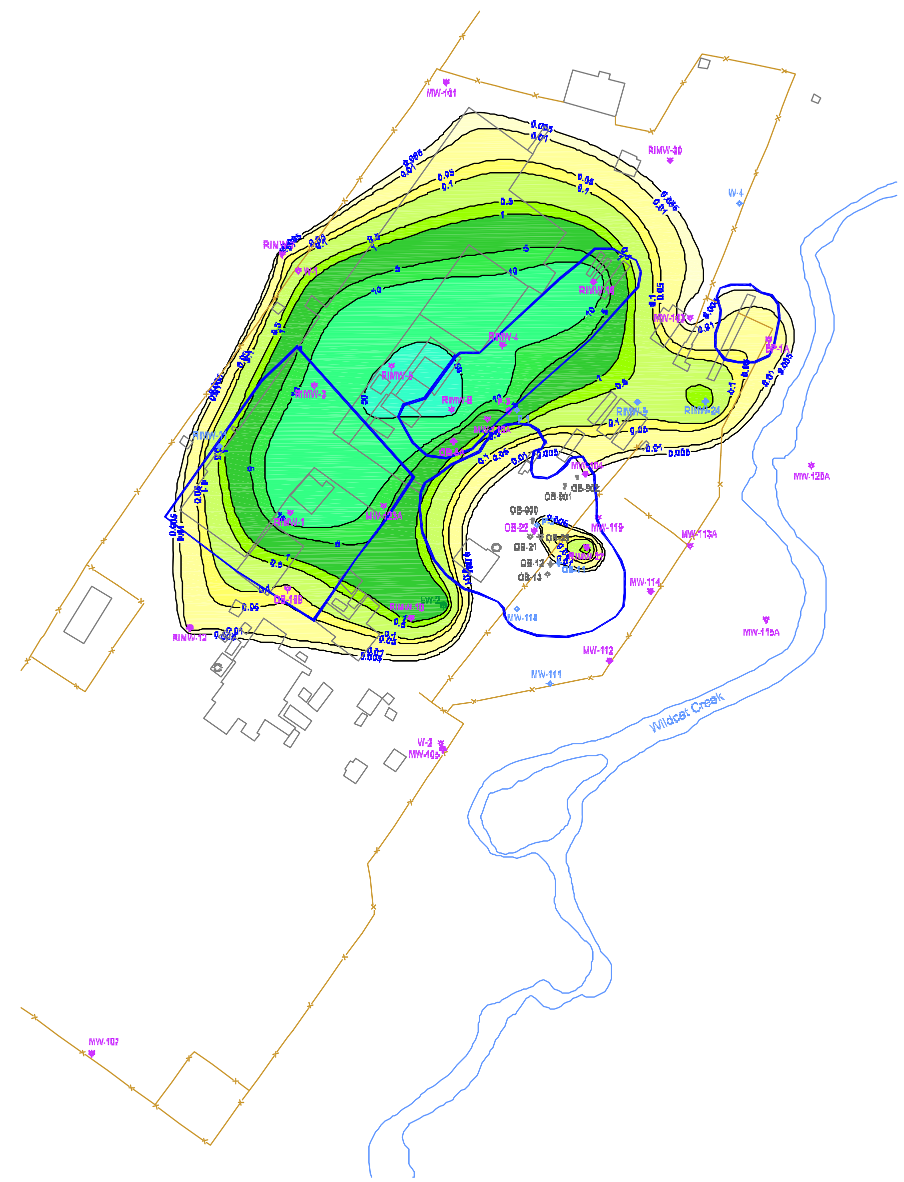
NOTE:
Figure is created from data in the 2008 RI prepared and submitted by CDM.

SCALE	AS SHOWN	DESIGNED BY	DATE	CB Concentrations in Regolith Groundwater Former PSC Site, Rock Hill, South Carolina
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS RDU, NORTH CAROLINA 27560		DRAWN BY TSH	DATE 04JUN12	
		CHECKED BY AMT	DATE 04JUN12	CONTRACT NO. 31827295
		APPROVED BY AMT	DATE 04JUN12	DRAWING NO. FIGURE-6 REV. 0

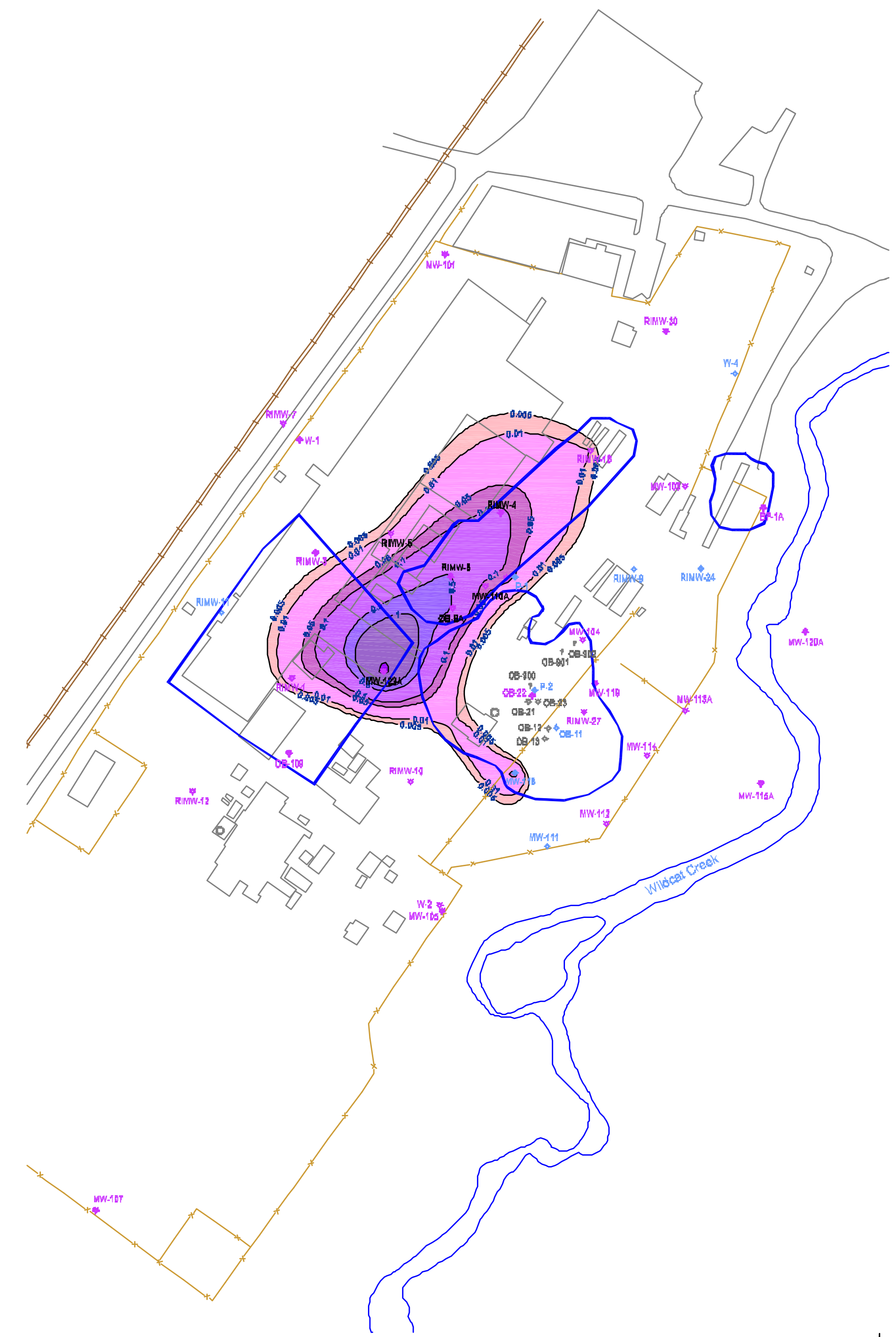
P:\Common Projects\Philip Services\5 Deliverables\51 Working Documents\Treatment Criteria Selection\Figures\June 2012\Figure 7 - Concentrations in Regolith.dwg



BTEX CONCENTRATIONS



TOTAL CEE CONCENTRATIONS



TOTAL CB CONCENTRATIONS

Legend

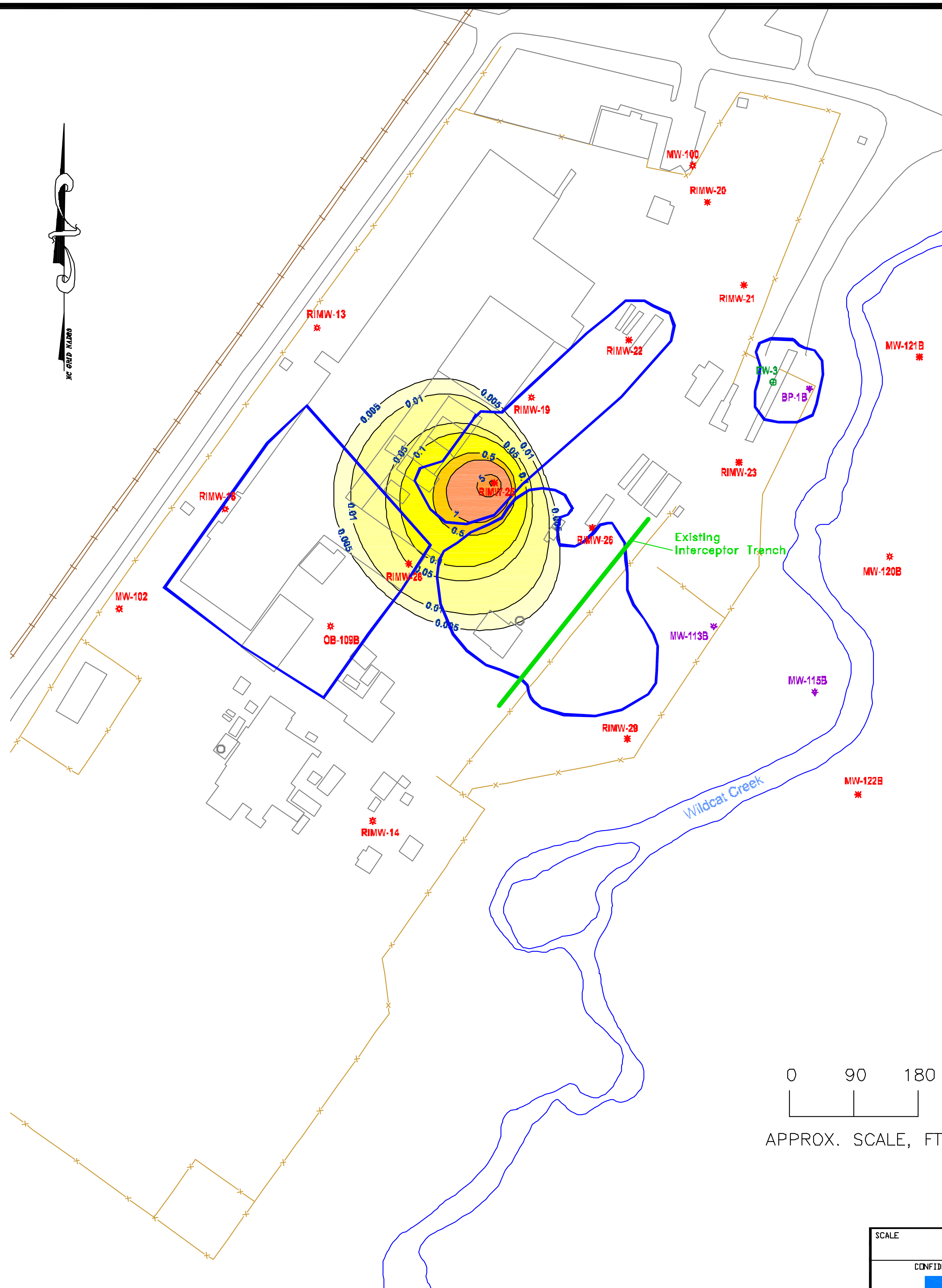
- January 2007 Samples - Saprolite
- September 2007 Samples - Saprolite
- January 2007 Samples - PWR
- September 2007 Samples - PWR
- April 2004 Samples PWR Extraction Well
- GW Area of Concern

NOTE:
Figure is created from data in the 2008 RI prepared and submitted by CDM.

SCALE	DESIGNED BY	DATE	
NONE			Concentrations in Regolith Groundwater Former PSC Site, Rock Hill, South Carolina
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS RDU, NORTH CAROLINA 27560	DRAWN BY TSH	DATE 04JUN12	
	CHECKED BY AMT	DATE 04JUN12	CONTRACT NO. 31827295 / DRAWING NO. FIGURE-7 / REV. 0
	APPROVED BY AMT	DATE 04JUN12	

Well ID	Sample Date	BTEX Total (mg/L)
BP-1B	Jan-07	<0.001
EW-3	Apr-04	<0.001
MW-100	Jan-07	<0.001
MW-102	Jan-07	<0.001
MW-108	Jan-07	BDL
MW-113B	Jan-07	<0.001
MW-115B	Jan-07	<0.001
MW-120B	Jan-07	BDL
MW-121B	Sep-07	BDL
MW-122B	Sep-07	<0.001
OB-109B	Jan-07	<0.001
RIMW 13	Jan-07	<0.001
RIMW 14	Jan-07	BDL
RIMW 18	Jan-07	<0.001
RIMW 19	Jan-07	<0.001
RIMW-20	Sep-07	<0.001
RIMW-21	Sep-07	<0.001
RIMW-22	Sep-07	<0.001
RIMW-23	Sep-07	<0.001
RIMW-25	Sep-07	14
RIMW-26	Sep-07	<0.001
RIMW-28	Sep-07	0.053
RIMW-29	Sep-07	<0.001

Total BTEX includes:
Benzene, Toluene,
Ethylbenzene, and Xylenes
BDL - Below Detection Limit



Legend

Contour Scale: 60, 10, 5, 1, 0.5, 0.1, 0.05, 0.01, 0.005, 0
Units in mg/L

- January 2007 Samples - Bedrock
- September 2007 Samples - Bedrock
- January 2007 Samples - PWR/Bedrock
- April 2004 Samples Extraction Wells
- GW Area of Concern

MW-121B
MW-120B
MW-115B
MW-122B

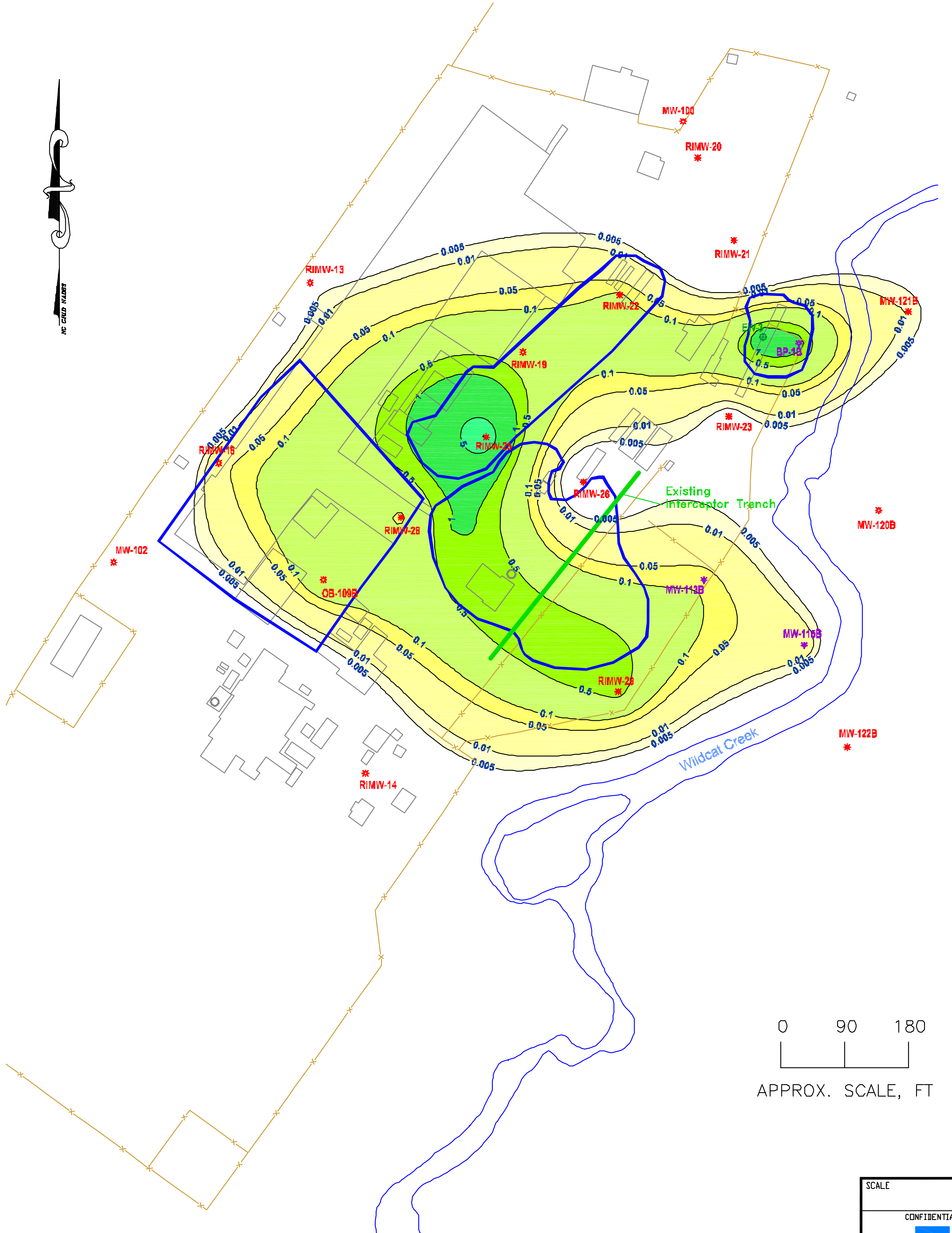
NOTE:
Figure is created from data in the 2008 RI prepared and submitted by CDM.

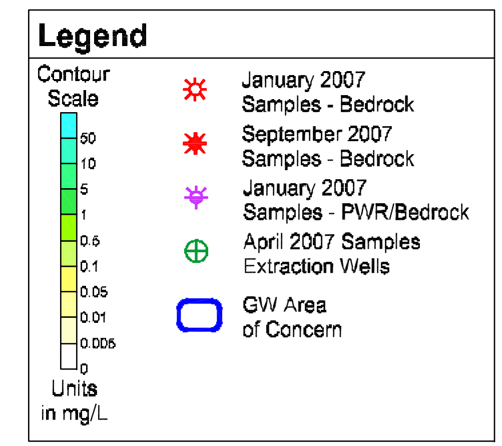
0 90 180
APPROX. SCALE, FT

SCALE	AS SHOWN	DESIGNED BY	DATE	BTEX Concentrations in Bedrock Groundwater Former PSC Site, Rock Hill, South Carolina
		DRAWN BY TSH	DATE 04JUN12	
		CHECKED BY AMT	DATE 04JUN12	CONTRACT NO. 31827295
		APPROVED BY AMT	DATE 04JUN12	DRAWING NO. FIGURE-8 REV. 0

Well ID	Sample Date	Total Chlorinated Ethene Ethanes (mg/L)
BP-1B	Jan-07	1.5
EW-3	Apr-04	2.4
MW-100	Jan-07	BDL
MW-102	Jan-07	<0.001
MW-108	Jan-07	BDL
MW-113B	Jan-07	0.085
MW-115B	Jan-07	0.027
MW-120B	Jan-07	BDL
MW-121B	Sep-07	0.010
MW-122B	Sep-07	BDL
OB-109B	Jan-07	0.35
RIMW 13	Jan-07	0.003
RIMW 14	Jan-07	<0.001
RIMW 18	Jan-07	0.03
RIMW 19	Jan-07	0.28
RIMW-20	Sep-07	0.002
RIMW-21	Sep-07	BDL
RIMW-22	Sep-07	0.12
RIMW-23	Sep-07	0.002
RIMW-25	Sep-07	11
RIMW-26	Sep-07	<0.001
RIMW-28	Sep-07	0.08
RIMW-29	Sep-07	0.76

Total Chlorinated Ethenes/Ethanes include:
Chloroethane, 1,1-Dichloroethane,
1,1-Dichloroethene, 1,2-Dichloroethane,
cis-1,2-Dichloroethene, 1,1,1-Trichloroethane,
Tetrachloroethene, 1,1,2,2-Tetrachloroethane,
Trichloroethene, 1,1,2-Trichloroethane,
and Vinyl Chloride
BDL - Below Detection Limit





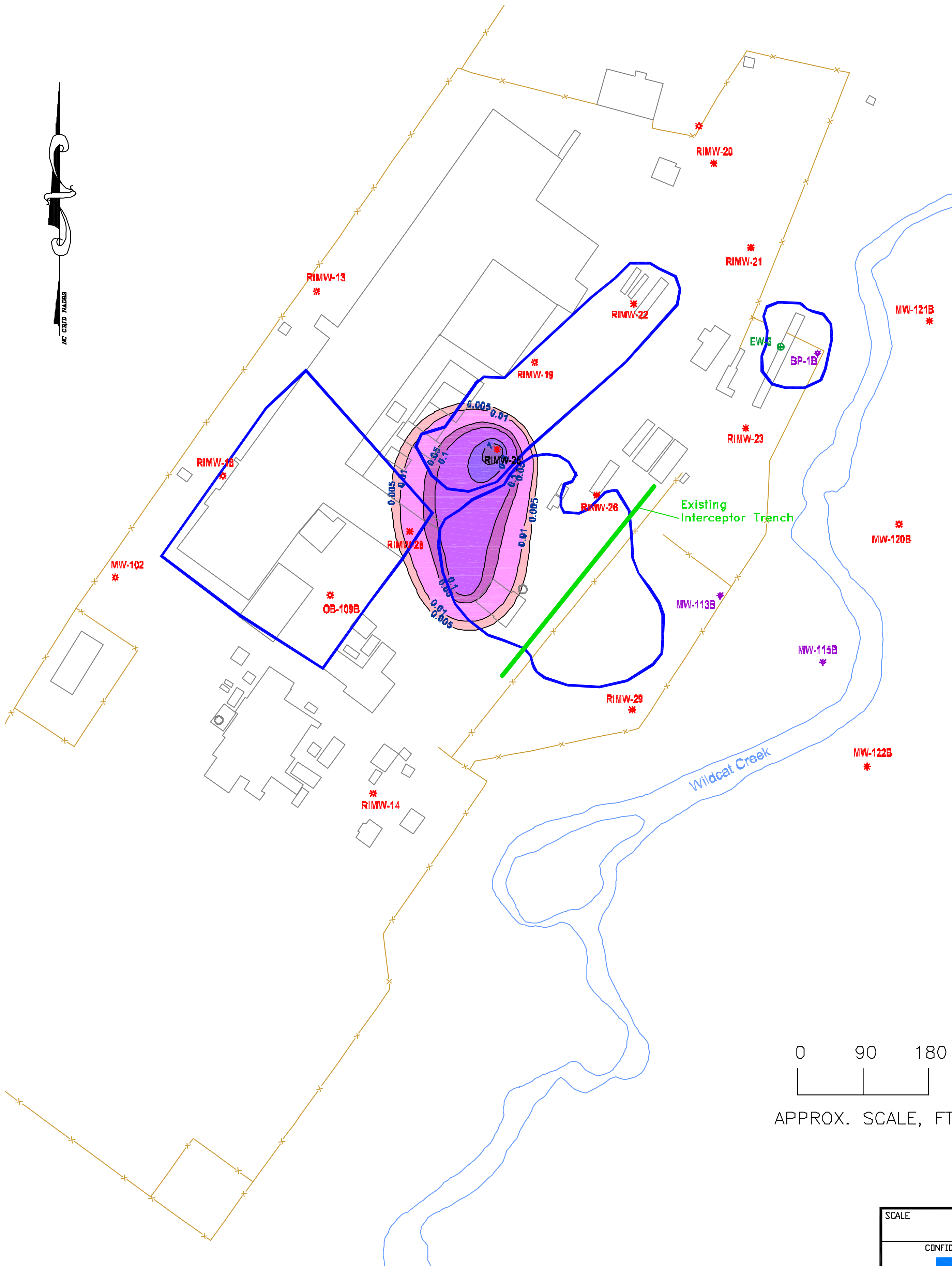
NOTE:
Figure is created from data in the 2008 RI prepared and submitted by CDM.

SCALE	DESIGNED BY	DATE	
AS SHOWN	DRAWN BY TSH	DATE 04JUN12	CEE Concentrations in Bedrock Groundwater Former PSC Site, Rock Hill, South Carolina
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS	CHECKED BY AMT	DATE 04JUN12	CONTRACT NO. 31827295
RDU, NORTH CAROLINA 27560	APPROVED BY AMT	DATE 04JUN12	DRAWING NO. FIGURE-9 REV. 0

P:\Common Projects\Philip Services\5 Deliverables\51 Working Documents\Treatment Criteria Selection\Figures\June 2012\Figure 9 - Total CEE in Bedrock.dwg, July

Well ID	Sample Date	Total Chlorinated Benzenes (mg/L)
BP-1B	Jan-07	0.002
EW-3	Apr-04	<0.001
MW-100	Jan-07	<0.001
MW-102	Jan-07	BDL
MW-108	Jan-07	BDL
MW-113B	Jan-07	BDL
MW-115B	Jan-07	BDL
MW-120B	Jan-07	BDL
MW-121B	Sep-07	BDL
MW-122B	Sep-07	BDL
OB-109B	Jan-07	BDL
RIMW 13	Jan-07	BDL
RIMW 14	Jan-07	BDL
RIMW 18	Jan-07	BDL
RIMW 19	Jan-07	BDL
RIMW-20	Sep-07	BDL
RIMW-21	Sep-07	BDL
RIMW-22	Sep-07	BDL
RIMW-23	Sep-07	BDL
RIMW-25	Sep-07	2.3
RIMW-26	Sep-07	BDL
RIMW-28	Sep-07	0.018
RIMW-29	Sep-07	BDL

Total Chlorinated Benzenes include:
1,2-Dichlorobenzene, 1,3-Dichlorobenzene,
1,4-Dichlorobenzene, 1,2,3-Trichlorobenzene,
1,2,4-Trichlorobenzene, and Chlorobenzene
BDL - Below Detection Limit



Legend

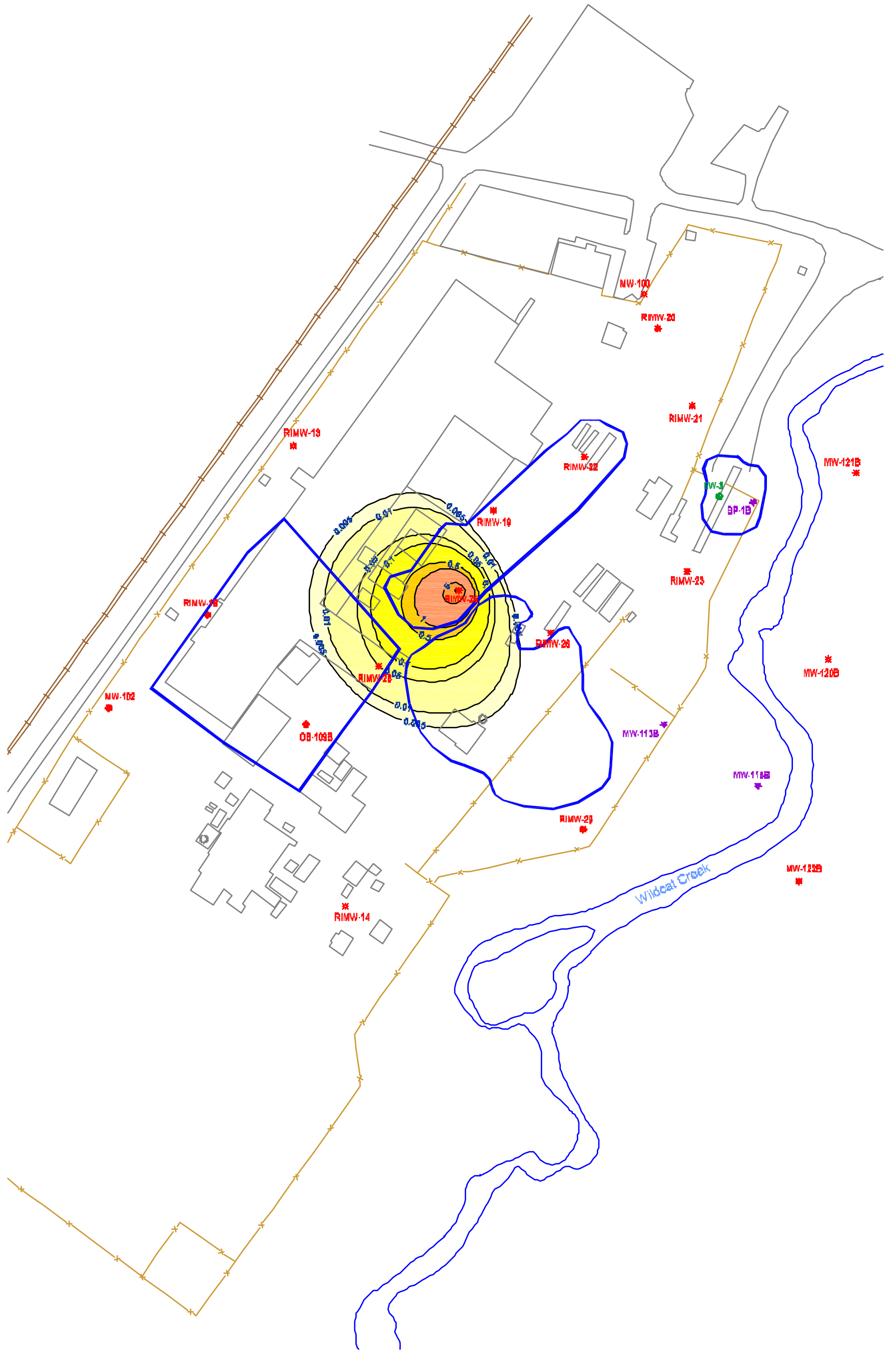
Contour Scale: 50, 10, 5, 1, 0.5, 0.1, 0.05, 0.01, 0.005, 0 — Units in mg/L

- January 2007 Samples - Bedrock
- September 2007 Samples - Bedrock
- January 2007 Samples - PWR/Bedrock
- April 2004 Samples Extraction Wells
- GW Area of Concern

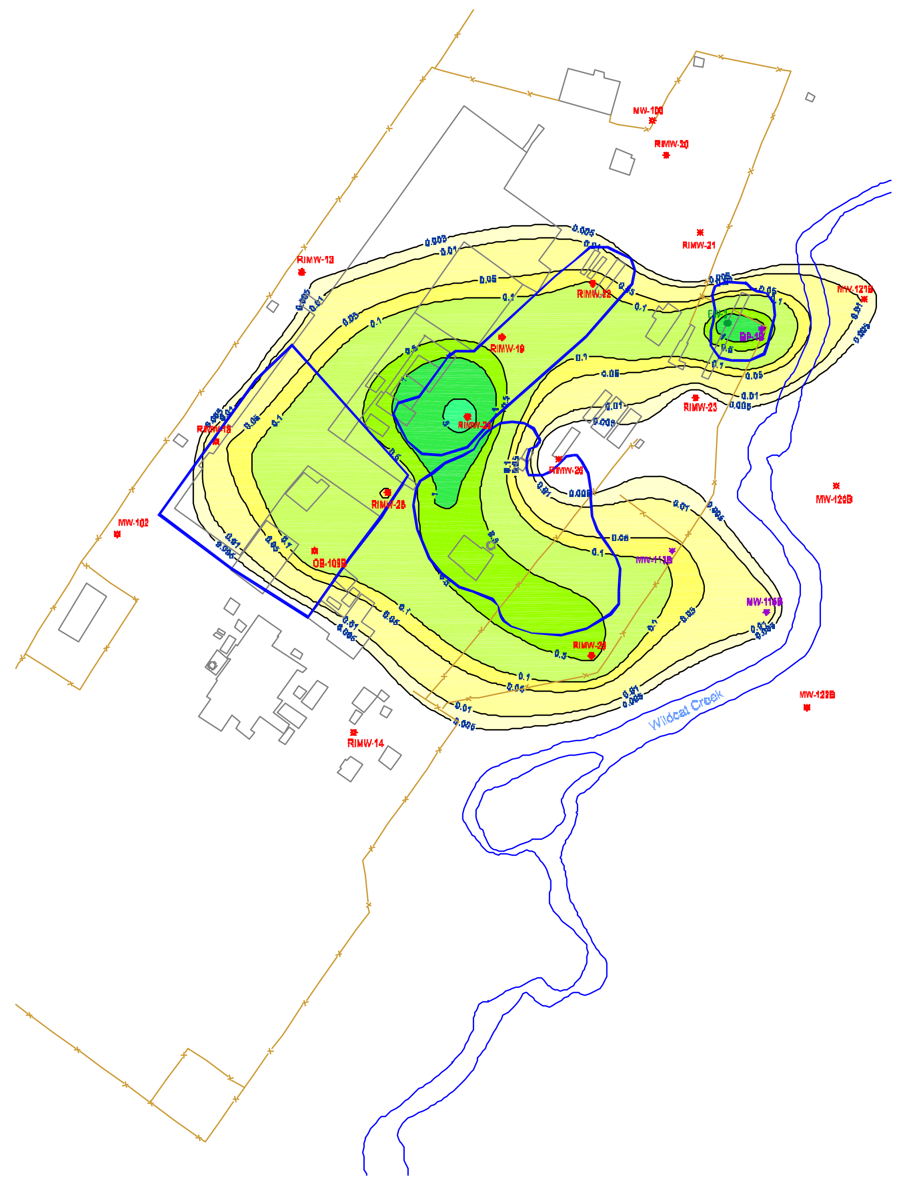
0 90 180
APPROX. SCALE, FT

NOTE:
Figure is created from data in the 2008 RI prepared and submitted by CDM.

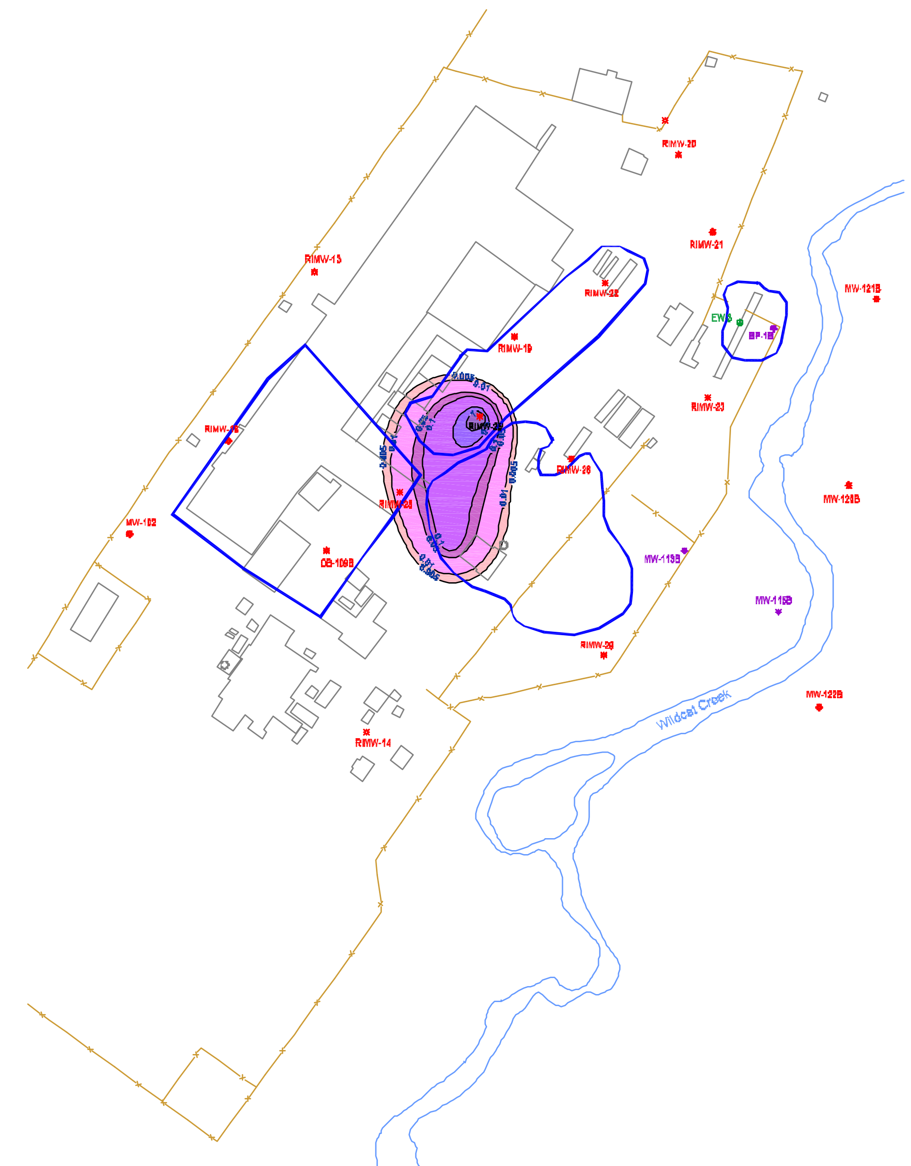
SCALE AS SHOWN	DESIGNED BY	DATE	CB Concentrations in Bedrock Groundwater Former PSC Site, Rock Hill, South Carolina		
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS, RDU, NORTH CAROLINA 27560	DRAWN BY TSH	DATE 04JUN12			
	CHECKED BY AMT	DATE 04JUN12	CONTRACT NO.	DRAWING NO.	REV.
	APPROVED BY AMT	DATE 04JUN12	31827295	FIGURE-10	0



BTEX CONCENTRATIONS



TOTAL CEE CONCENTRATIONS



TOTAL CB CONCENTRATIONS

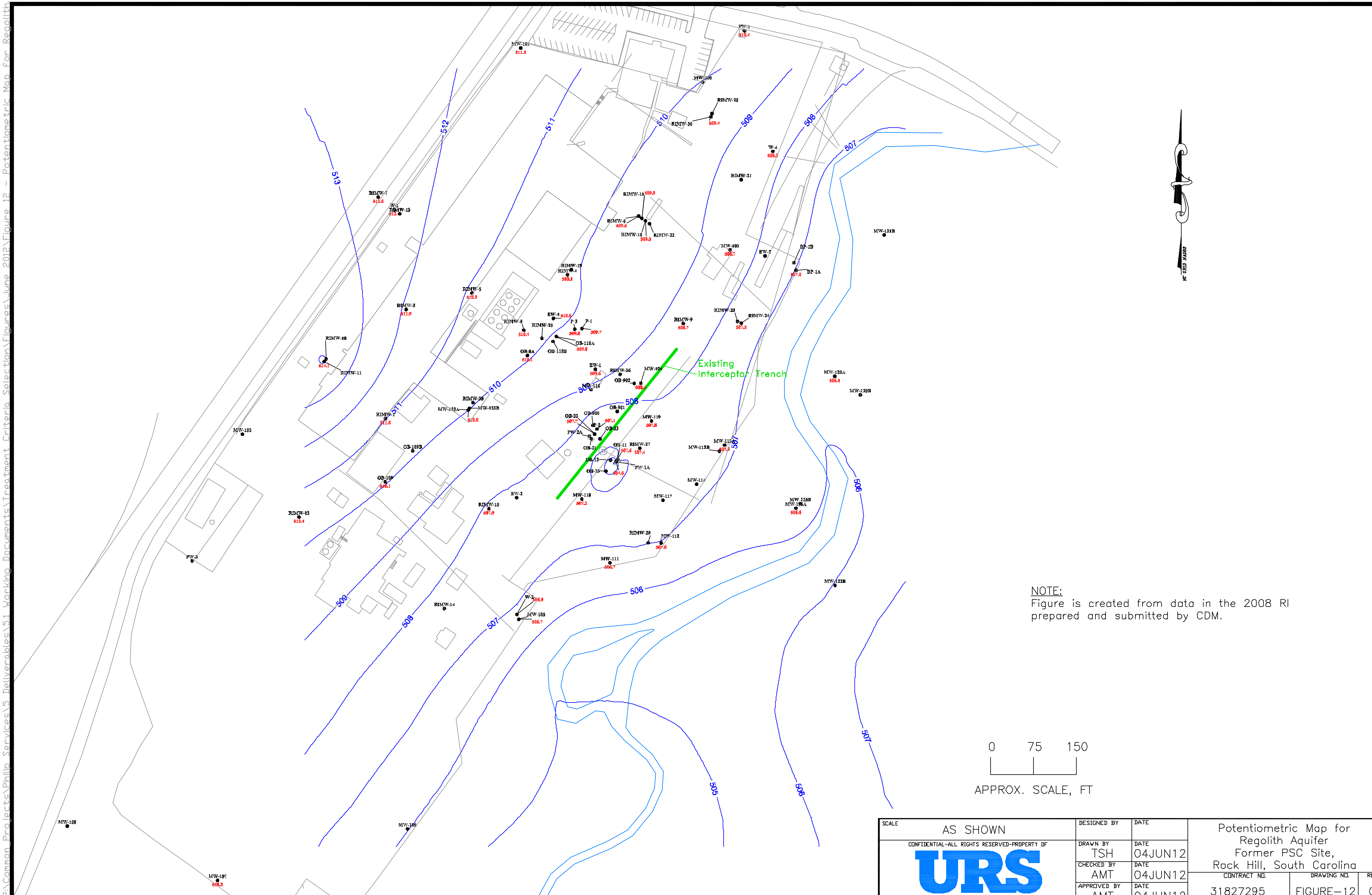
Legend

- January 2007 Samples - Bedrock
- September 2007 Samples - Bedrock
- January 2007 Samples - PWR/Bedrock
- April 2004 Samples Extraction Wells
- GW Area of Concern

NOTE:
Figure is created from data in the 2008 RI prepared and submitted by CDM.

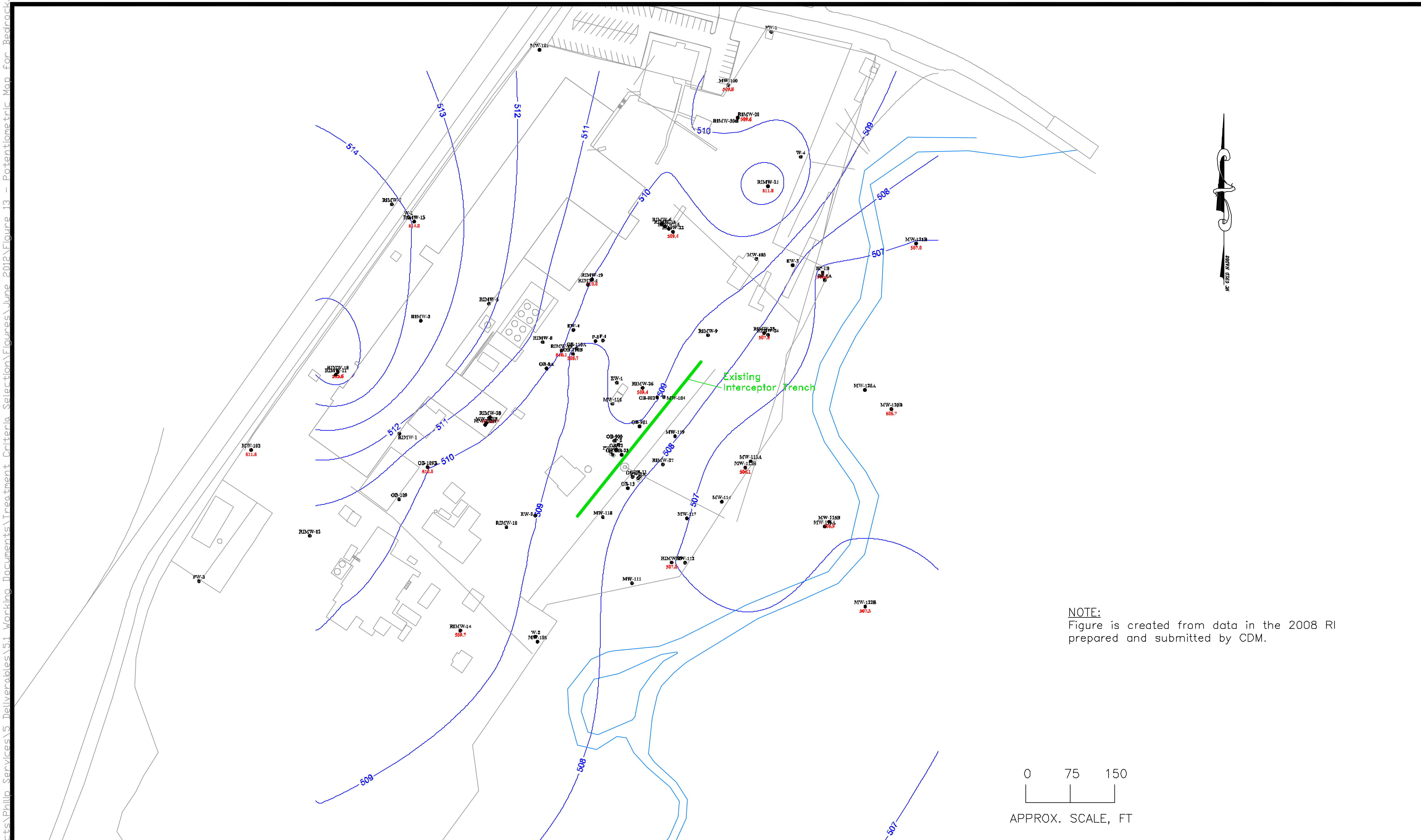
SCALE	DESIGNED BY	DATE	Concentrations in Bedrock Groundwater Former PSC Site, Rock Hill, South Carolina		
NONE					
URS RDU, NORTH CAROLINA 27560	DRAWN BY TSH	DATE 04JUN12			
	CHECKED BY AMT	DATE 04JUN12	CONTRACT NO.	DRAWING NO.	REV.
	APPROVED BY AMT	DATE 04JUN12	31827295	FIGURE-11	0

P:\Common Projects\Philip Services\5 Deliverables\51 Working Documents\Treatment Criteria Selection\Figures\June 2012\Figure 11 - Concentrations in Bedrock.dwg

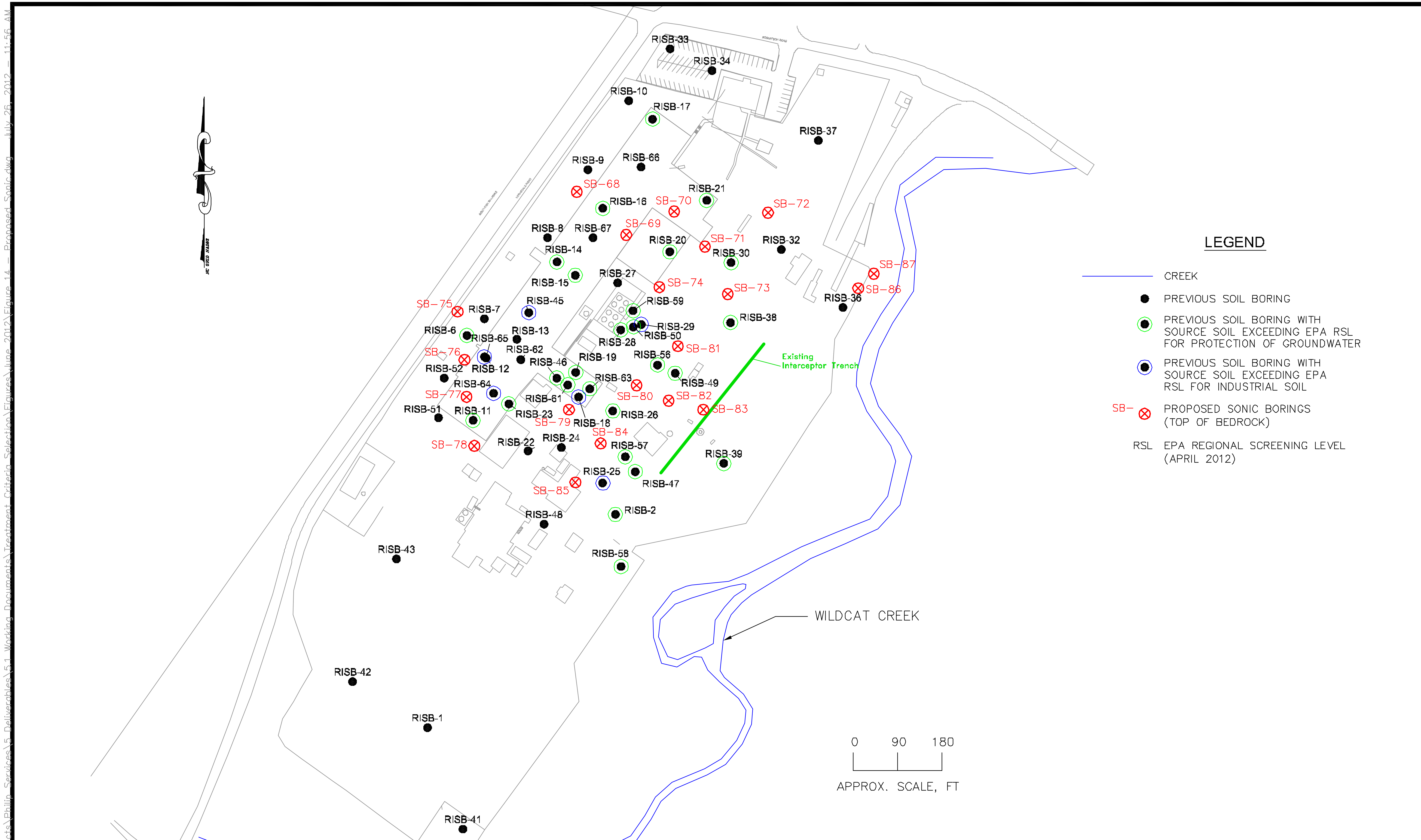


NOTE:
Figure is created from data in the 2008 RI prepared and submitted by CDM.

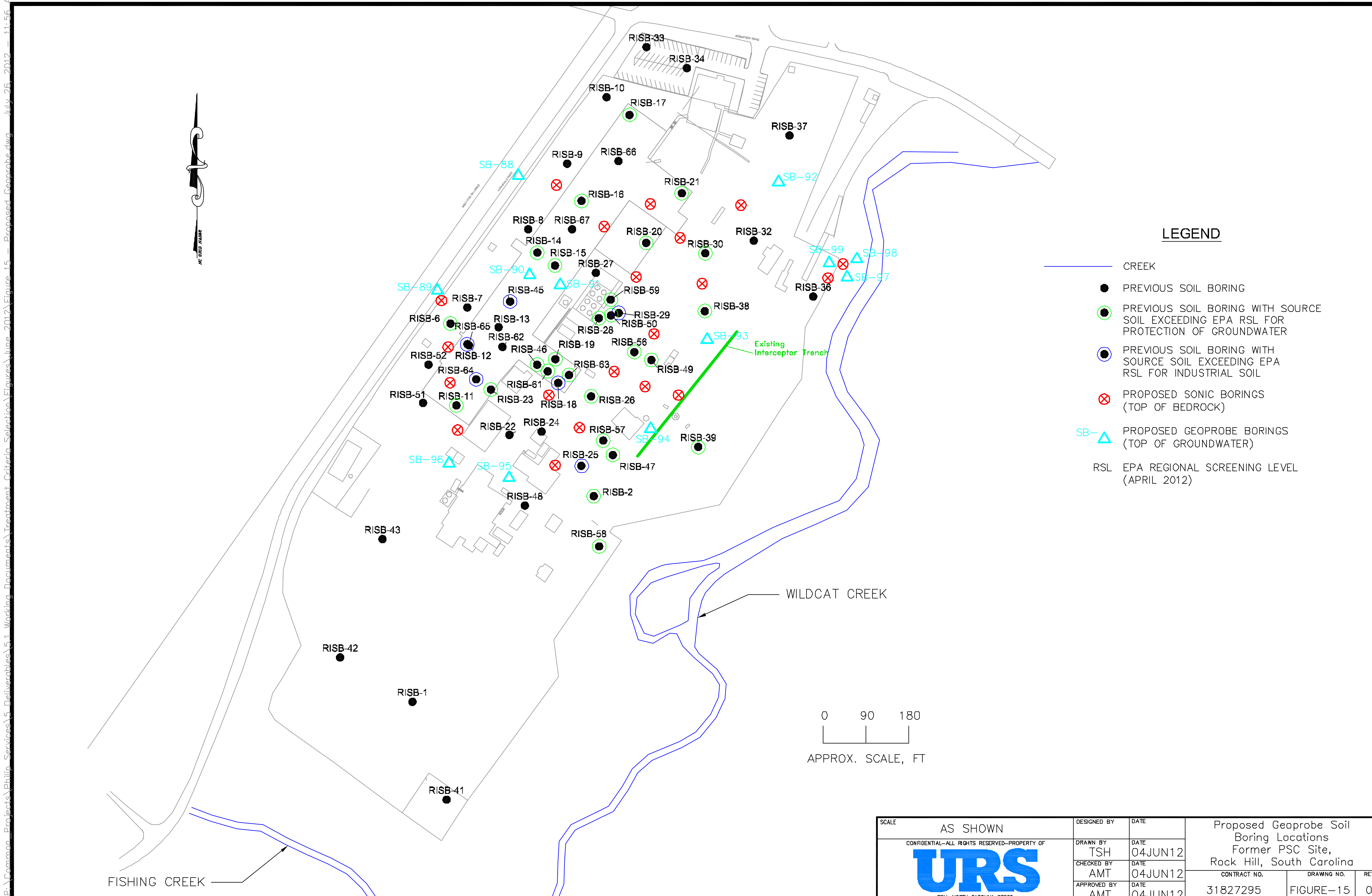
SCALE AS SHOWN	DESIGNED BY	DATE	Potentiometric Map for Regolith Aquifer Former PSC Site, Rock Hill, South Carolina		
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS RDU, NORTH CAROLINA 27560	DRAWN BY TSH	DATE 04JUN12			
	CHECKED BY AMT	DATE 04JUN12	CONTRACT NO. 31827295	DRAWING NO. FIGURE–12	REV. 0
	APPROVED BY AMT	DATE 04JUN12			



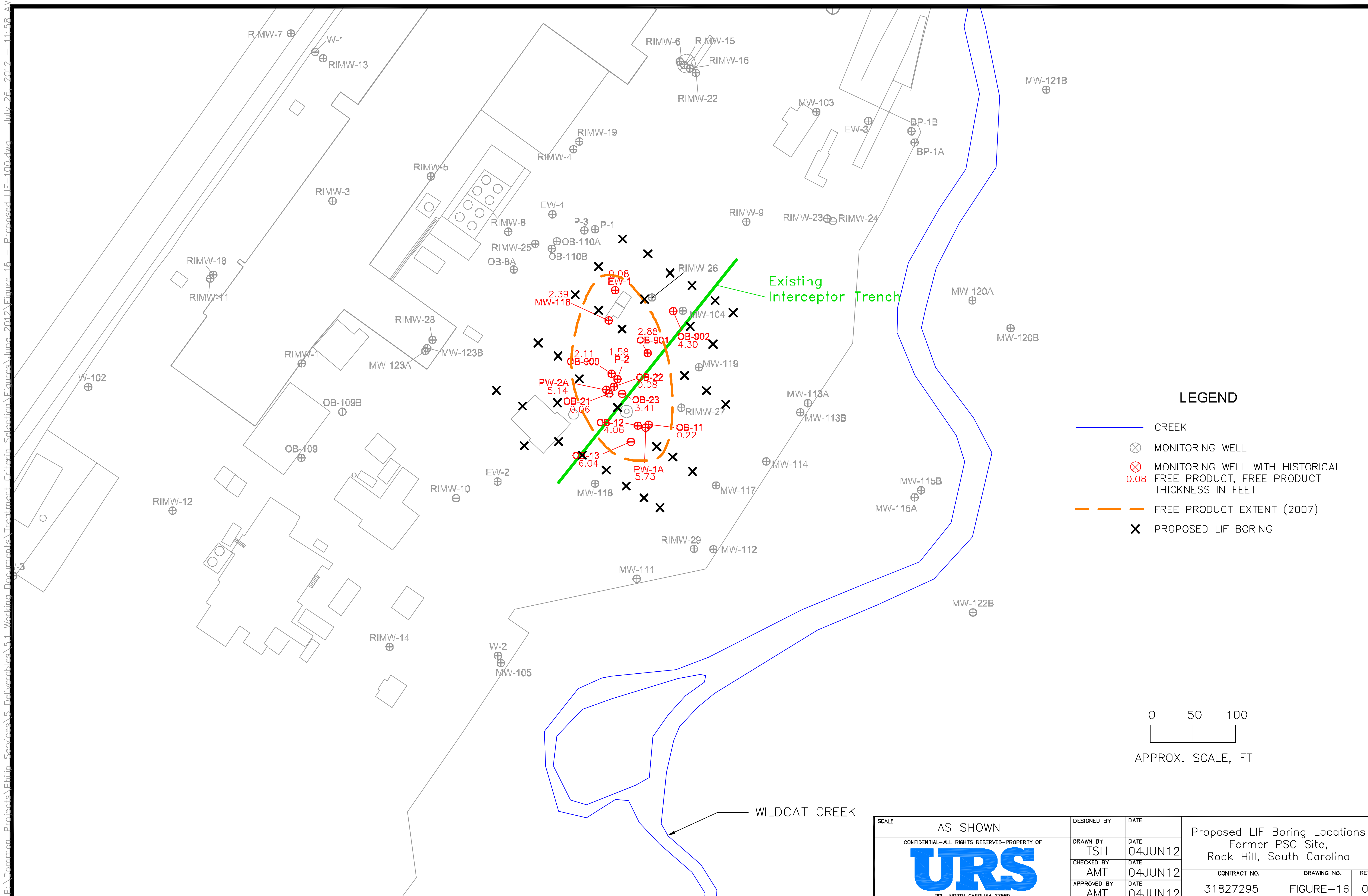
SCALE AS SHOWN	DESIGNED BY	DATE	Potentiometric Map for Bedrock Aquifer Former PSC Site, Rock Hill, South Carolina	
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS RDU, NORTH CAROLINA 27560	DRAWN BY TSH	DATE 04JUN12		
	CHECKED BY AMT	DATE 04JUN12	CONTRACT NO. 31827295	DRAWING NO. FIGURE-13 REV. 0
	APPROVED BY AMT	DATE 04JUN12		



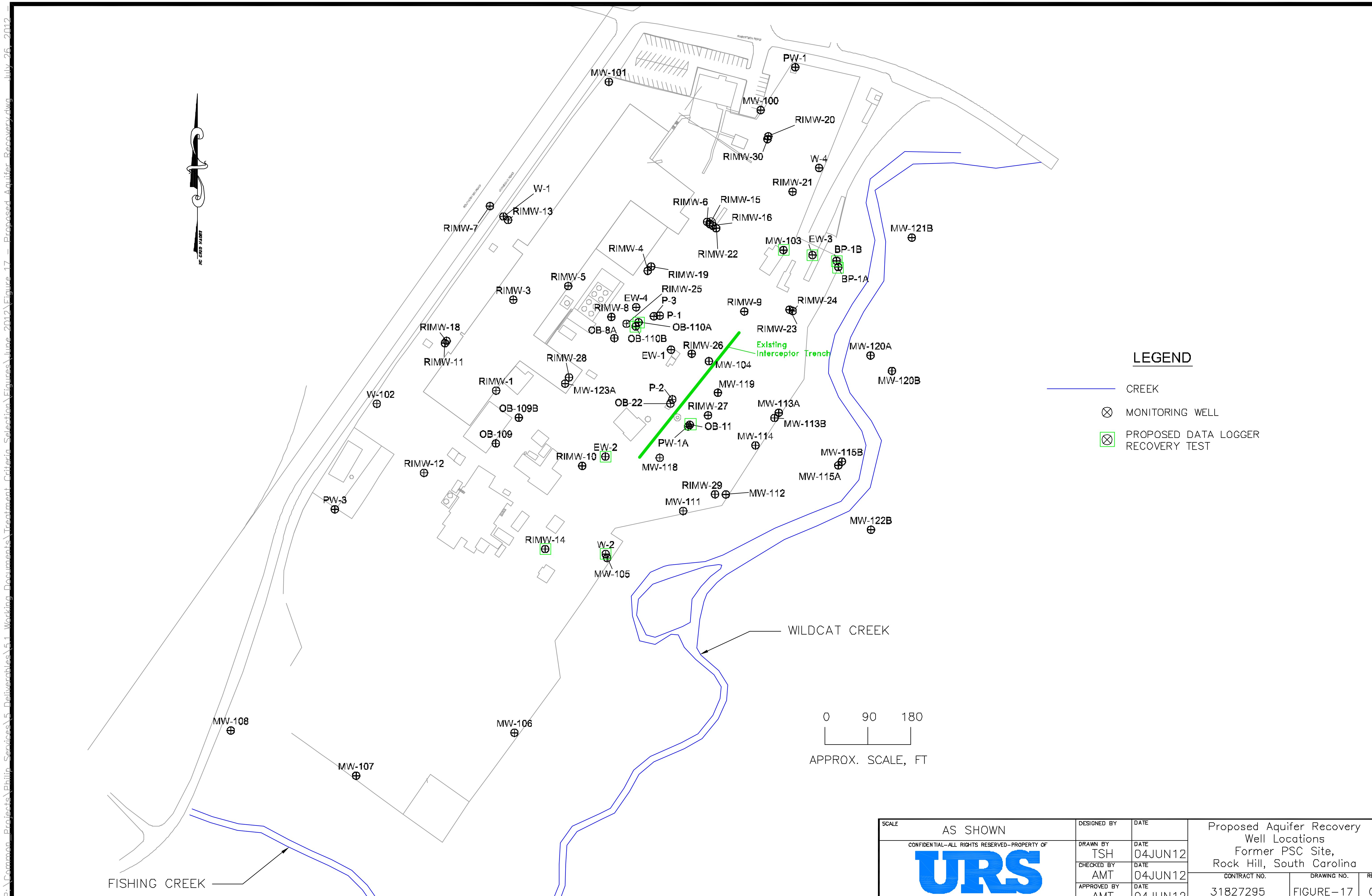
SCALE	DESIGNED BY	DATE	
AS SHOWN	DRAWN BY TSH	DATE 04JUN12	Proposed Roto Sonic Soil Boring Locations Former PSC Site, Rock Hill, South Carolina
CONFIDENTIAL–ALL RIGHTS RESERVED–PROPERTY OF URS	CHECKED BY AMT	DATE 04JUN12	CONTRACT NO. 31827295
RDU, NORTH CAROLINA 27560	APPROVED BY AMT	DATE 04JUN12	DRAWING NO. FIGURE–14 REV. 0



RISB-33
RISB-34
RISB-10
RISB-17
RISB-37
RISB-9
RISB-66
SB-88
RISB-21
SB-92
RISB-16
RISB-8
RISB-67
RISB-20
RISB-32
RISB-14
RISB-15
RISB-30
SB-99
SB-98
SB-90
RISB-27
SB-97
SB-89
SB-91
RISB-59
RISB-36
RISB-45
RISB-7
RISB-29
RISB-38
RISB-6
RISB-65
RISB-13
RISB-50
RISB-28
SB-93
RISB-62
Existing
Interceptor Trench
RISB-19
RISB-56
RISB-52
RISB-12
RISB-46
RISB-63
RISB-49
RISB-64
RISB-61
RISB-51
RISB-11
RISB-23
RISB-18
RISB-26
RISB-22
RISB-24
RISB-57
SB-94
RISB-39
SB-96
RISB-25
SB-95
RISB-47
RISB-48
RISB-2
RISB-43
RISB-58
WILDCAT CREEK
RISB-42
RISB-1
RISB-41
FISHING CREEK
0
90
180
APPROX. SCALE, FT
LEGEND
CREEK
PREVIOUS SOIL BORING
PREVIOUS SOIL BORING WITH SOURCE SOIL EXCEEDING EPA RSL FOR PROTECTION OF GROUNDWATER
PREVIOUS SOIL BORING WITH SOURCE SOIL EXCEEDING EPA RSL FOR INDUSTRIAL SOIL
PROPOSED SONIC BORINGS (TOP OF BEDROCK)
SB-
PROPOSED GEOPROBE BORINGS (TOP OF GROUNDWATER)
RSL
EPA REGIONAL SCREENING LEVEL (APRIL 2012)
SCALE
AS SHOWN
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF
URS
RDU, NORTH CAROLINA 27560
DESIGNED BY
DATE
DRAWN BY
TSH
DATE
04JUN12
CHECKED BY
AMT
DATE
04JUN12
APPROVED BY
AMT
DATE
04JUN12
Proposed Geoprobe Soil Boring Locations Former PSC Site, Rock Hill, South Carolina
CONTRACT NO.
31827295
DRAWING NO.
FIGURE-15
REV.
0

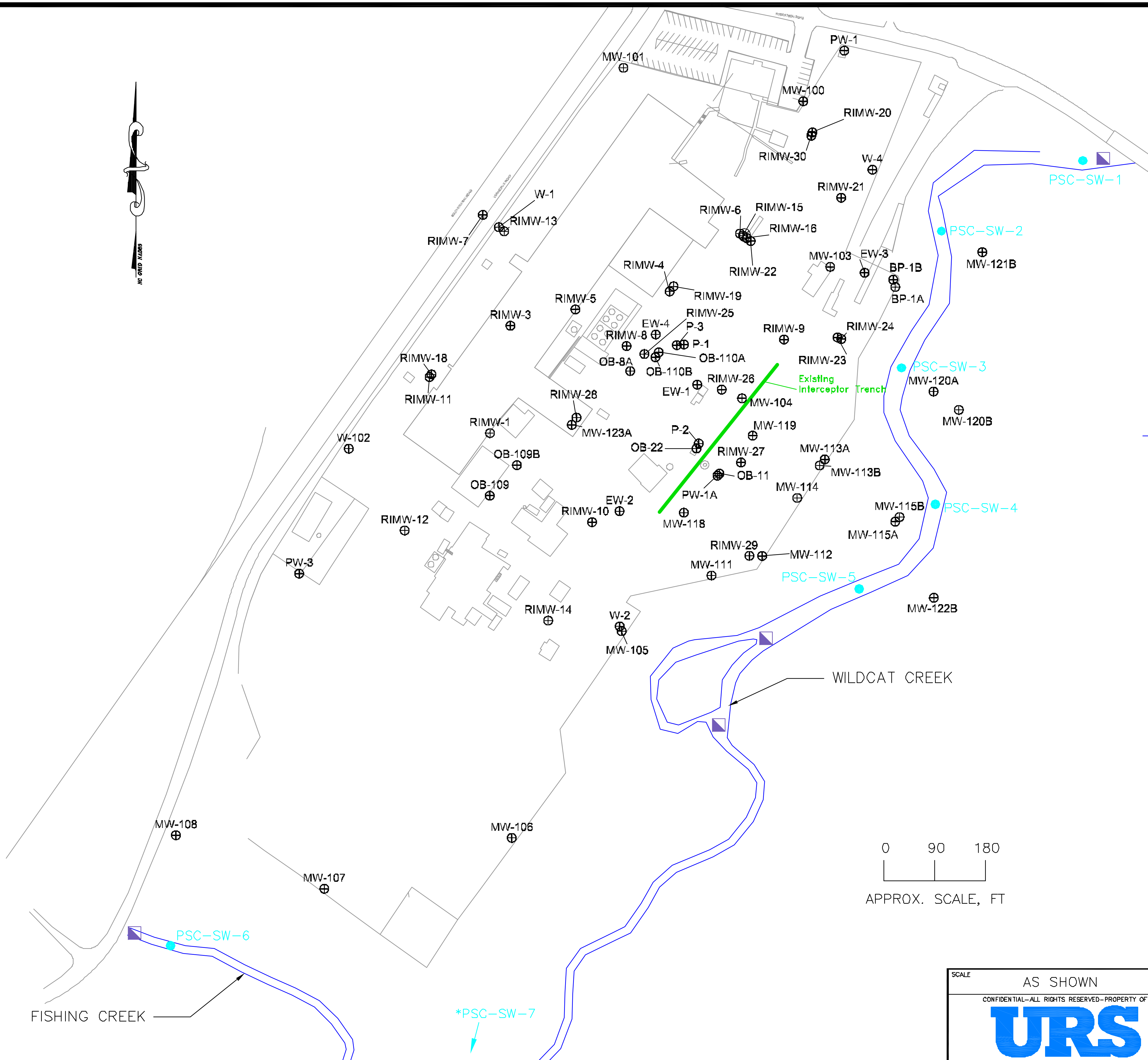


P:\Common_Projects\Philip_Services\5_Deliverables\5.1_Working_Documents\Treatment_Criteria_Selection\Figures\June_2012\Figure_16 — Proposed_LIF-100.dwg July 26, 2012 — 11:58 AM



SCALE AS SHOWN	DESIGNED BY	DATE	Proposed Aquifer Recovery Well Locations Former PSC Site, Rock Hill, South Carolina		
CONFIDENTIAL–ALL RIGHTS RESERVED–PROPERTY OF URS RDU, NORTH CAROLINA 27560	DRAWN BY TSH	DATE 04JUN12			
	CHECKED BY AMT	DATE 04JUN12	CONTRACT NO.	DRAWING NO.	REV.
	APPROVED BY AMT	DATE 04JUN12	31827295	FIGURE–17	0

P:\Common_Projects\Philip_Services\5_Deliverables\5.1_Working_Documents\Treatment_Criteria_Selection\Figures\June_2012\Figure 17 – Proposed Aquifer Recovery.dwg July 26, 2012



LEGEND

- CREEK
- MONITORING WELL
- SURFACE WATER SAMPLE LOCATION
- STAFF GAUGE LOCATION

*NOTE:
PSC-SW-7 WILL BE COLLECTED AT THE CONFLUENCE OF WILDCAT AND FISHING CREEK (NOT SHOWN ON MAP).

SCALE	DESIGNED BY	DATE	
AS SHOWN			Proposed Surface Water Sample Locations Former PSC Site, Rock Hill, South Carolina
CONFIDENTIAL–ALL RIGHTS RESERVED–PROPERTY OF URS RDU, NORTH CAROLINA 27560	DRAWN BY TSH	DATE 04JUN12	
	CHECKED BY AMT	DATE 04JUN12	CONTRACT NO. 31827295
	APPROVED BY AMT	DATE 04JUN12	DRAWING NO. FIGURE-18 / REV. 0

APPENDIX A

CROSS-SECTIONS FROM THE RI

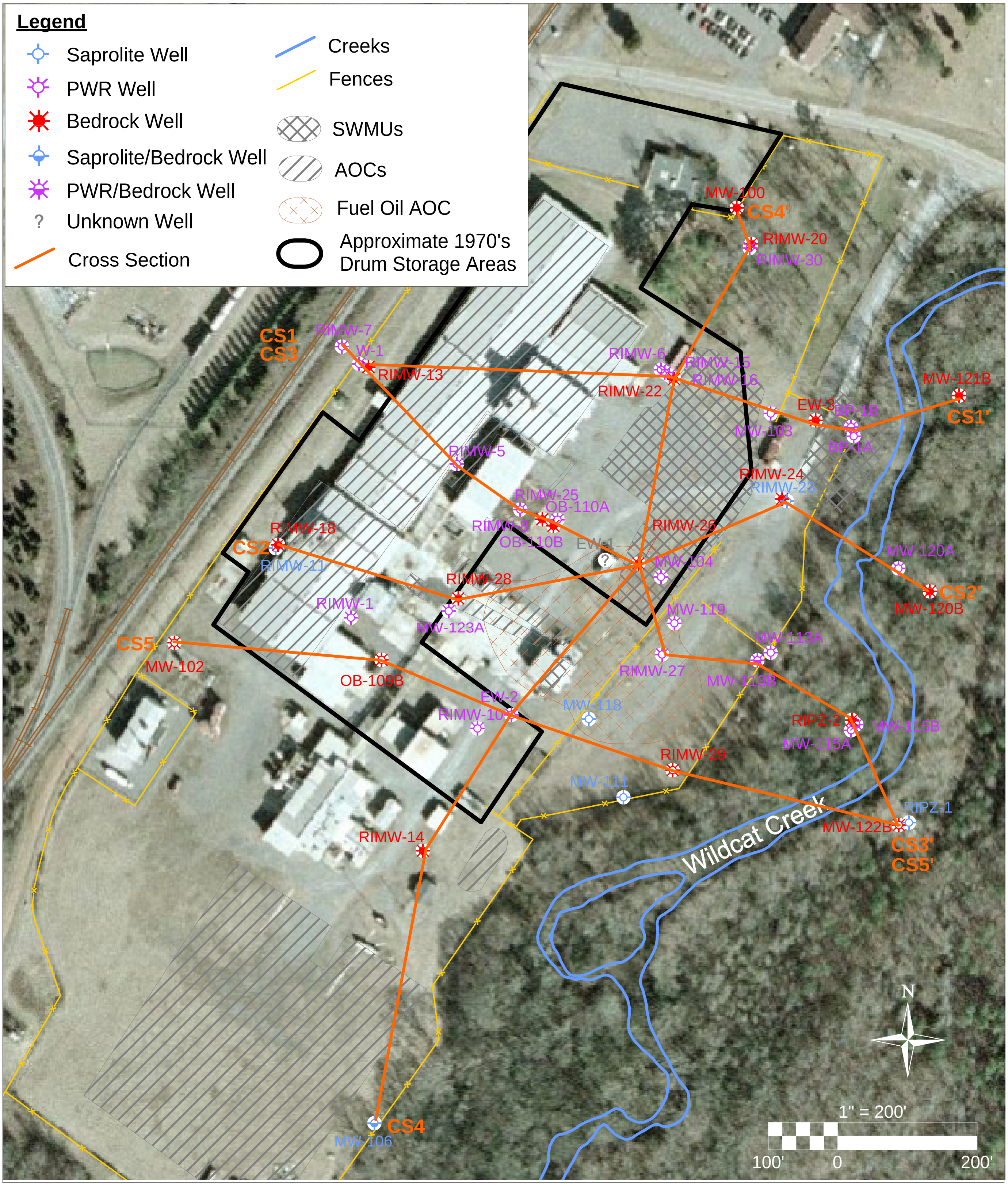
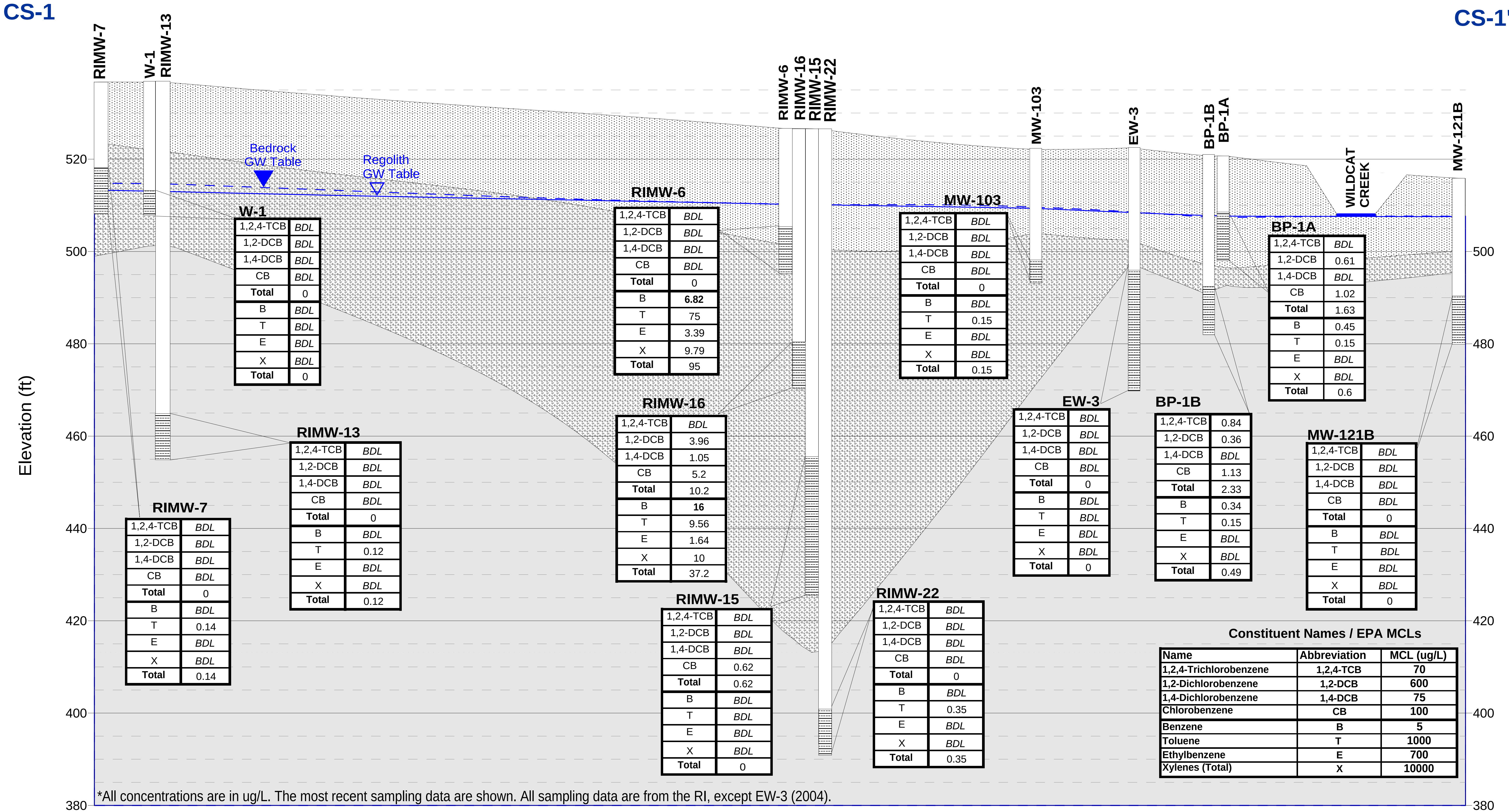


Figure 4-3
Cross Section Location Map
Remedial Investigation Report
December 2007
PSC Site - Rock Hill, South Carolina

CDM



	RIMW-7	W-1	RIMW-13	RIMW-6	RIMW-16	RIMW-15	RIMW-22	MW-103	EW-3	BP-1B	BP-1A	MW-121B
1,2,4-TCB	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*	0.84	*BDL*	*BDL*
1,2-DCB	*BDL*	*BDL*	*BDL*	*BDL*	3.96	*BDL*	*BDL*	*BDL*	*BDL*	0.36	0.61	*BDL*
1,4-DCB	*BDL*	*BDL*	*BDL*	*BDL*	1.05	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*
CB	*BDL*	*BDL*	*BDL*	*BDL*	5.2	0.62	*BDL*	*BDL*	*BDL*	1.13	1.02	*BDL*
Total	0	0	0	0	10.2	0.62	0	0	0	2.33	1.63	0
B	*BDL*	*BDL*	*BDL*	**6.82**	**16**	*BDL*	*BDL*	*BDL*	*BDL*	0.34	0.45	*BDL*
T	0.14	*BDL*	0.12	75	9.56	*BDL*	0.35	0.15	*BDL*	0.15	0.15	*BDL*
E	*BDL*	*BDL*	*BDL*	3.39	1.64	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*
X	*BDL*	*BDL*	*BDL*	9.79	10	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*	*BDL*
Total	0.14	0	0.12	95	37.2	0	0.35	0.15	0	0.49	0.6	0

Constituent Names / EPA MCLs

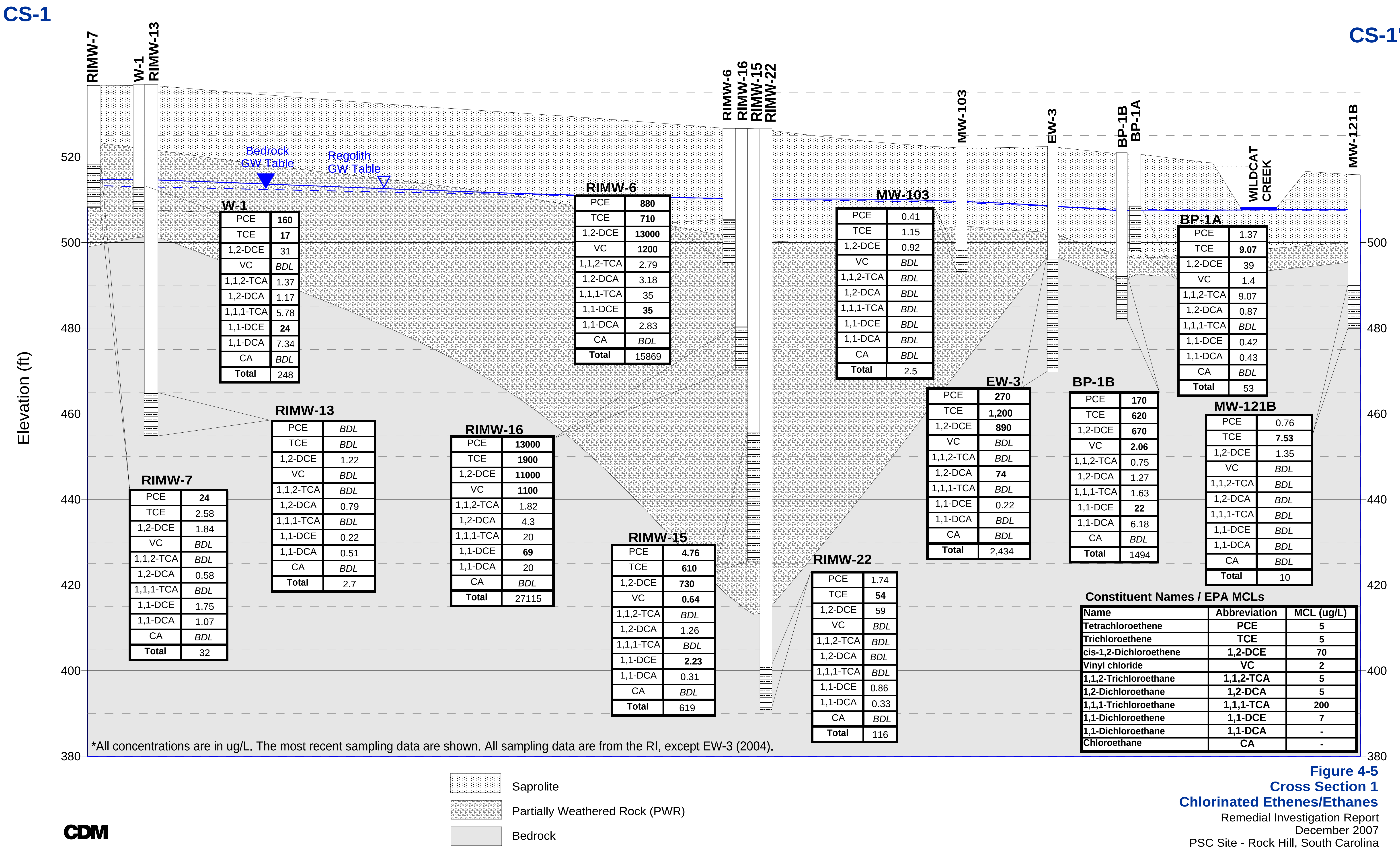
Name	Abbreviation	MCL (ug/L)
1,2,4-Trichlorobenzene	1,2,4-TCB	70
1,2-Dichlorobenzene	1,2-DCB	600
1,4-Dichlorobenzene	1,4-DCB	75
Chlorobenzene	CB	100
Benzene	B	5
Toluene	T	1000
Ethylbenzene	E	700
Xylenes (Total)	X	10000

*All concentrations are in ug/L. The most recent sampling data are shown. All sampling data are from the RI, except EW-3 (2004).

Saprolite
Partially Weathered Rock (PWR)
Bedrock

CDM

Figure 4-4
Cross Section 1
Chlorinated Benzenes/BTEX
Remedial Investigation Report
December 2007
PSC Site - Rock Hill, South Carolina



W-1

PCE	160
TCE	17
1,2-DCE	31
VC	BDL
1,1,2-TCA	1.37
1,2-DCA	1.17
1,1,1-TCA	5.78
1,1-DCE	24
1,1-DCA	7.34
CA	BDL
Total	248

RIMW-7

PCE	24
TCE	2.58
1,2-DCE	1.84
VC	BDL
1,1,2-TCA	BDL
1,2-DCA	0.58
1,1,1-TCA	BDL
1,1-DCE	1.75
1,1-DCA	1.07
CA	BDL
Total	32

RIMW-13

PCE	BDL
TCE	BDL
1,2-DCE	1.22
VC	BDL
1,1,2-TCA	BDL
1,2-DCA	0.79
1,1,1-TCA	BDL
1,1-DCE	0.22
1,1-DCA	0.51
CA	BDL
Total	2.7

RIMW-16

PCE	13000
TCE	1900
1,2-DCE	11000
VC	1100
1,1,2-TCA	1.82
1,2-DCA	4.3
1,1,1-TCA	20
1,1-DCE	69
1,1-DCA	20
CA	BDL
Total	27115

RIMW-6

PCE	880
TCE	710
1,2-DCE	13000
VC	1200
1,1,2-TCA	2.79
1,2-DCA	3.18
1,1,1-TCA	35
1,1-DCE	35
1,1-DCA	2.83
CA	BDL
Total	15869

RIMW-15

PCE	4.76
TCE	610
1,2-DCE	730
VC	0.64
1,1,2-TCA	BDL
1,2-DCA	1.26
1,1,1-TCA	BDL
1,1-DCE	2.23
1,1-DCA	0.31
CA	BDL
Total	619

RIMW-22

PCE	1.74
TCE	54
1,2-DCE	59
VC	BDL
1,1,2-TCA	BDL
1,2-DCA	BDL
1,1,1-TCA	BDL
1,1-DCE	0.86
1,1-DCA	0.33
CA	BDL
Total	116

MW-103

PCE	0.41
TCE	1.15
1,2-DCE	0.92
VC	BDL
1,1,2-TCA	BDL
1,2-DCA	BDL
1,1,1-TCA	BDL
1,1-DCE	BDL
1,1-DCA	BDL
CA	BDL
Total	2.5

EW-3

PCE	270
TCE	1,200
1,2-DCE	890
VC	BDL
1,1,2-TCA	BDL
1,2-DCA	74
1,1,1-TCA	BDL
1,1-DCE	0.22
1,1-DCA	BDL
CA	BDL
Total	2,434

BP-1B

PCE	170
TCE	620
1,2-DCE	670
VC	2.06
1,1,2-TCA	0.75
1,2-DCA	1.27
1,1,1-TCA	1.63
1,1-DCE	22
1,1-DCA	6.18
CA	BDL
Total	1494

BP-1A

PCE	1.37
TCE	9.07
1,2-DCE	39
VC	1.4
1,1,2-TCA	9.07
1,2-DCA	0.87
1,1,1-TCA	BDL
1,1-DCE	0.42
1,1-DCA	0.43
CA	BDL
Total	53

MW-121B

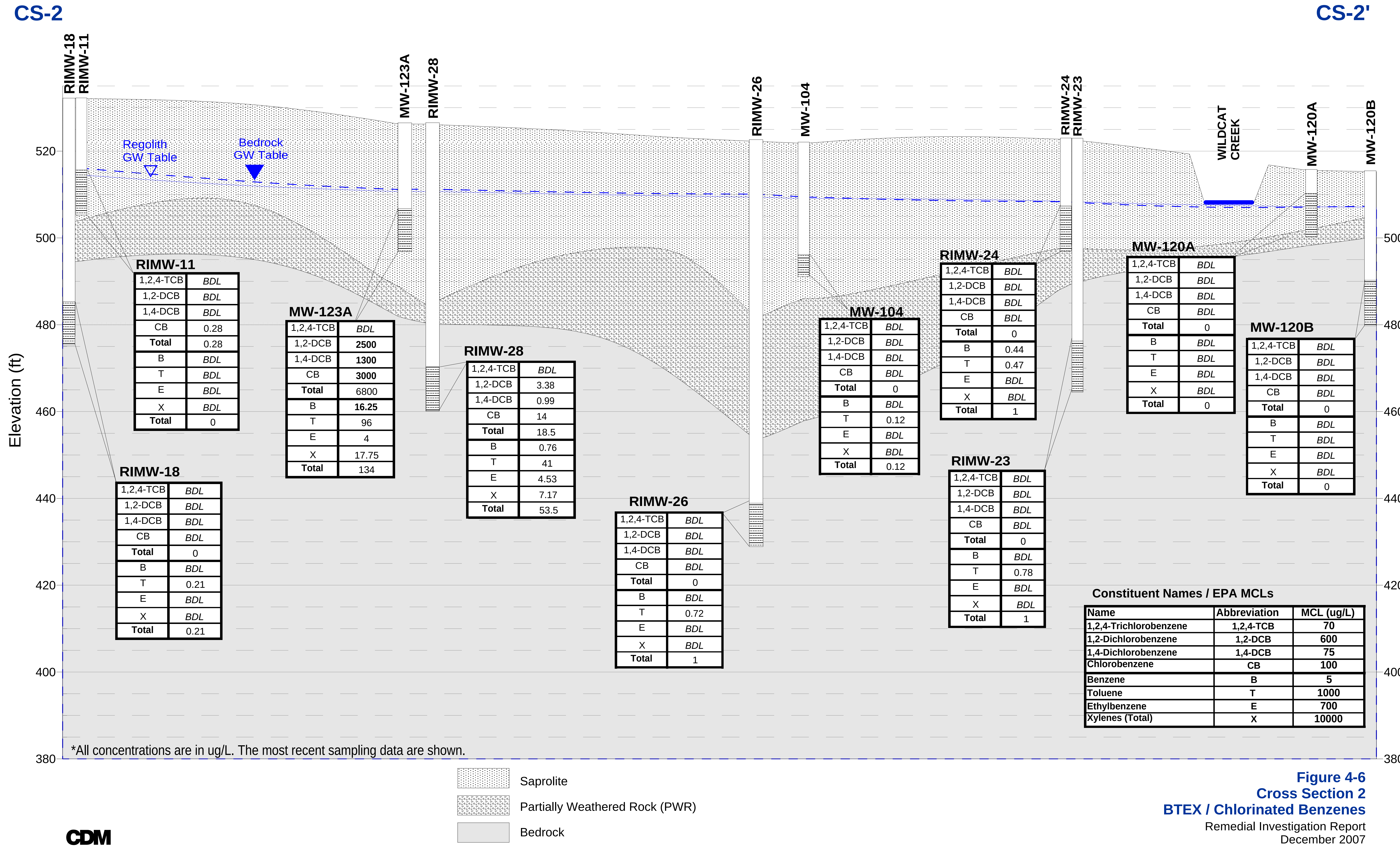
PCE	0.76
TCE	7.53
1,2-DCE	1.35
VC	BDL
1,1,2-TCA	BDL
1,2-DCA	BDL
1,1,1-TCA	BDL
1,1-DCE	BDL
1,1-DCA	BDL
CA	BDL
Total	10

Constituent Names / EPA MCLs

Name	Abbreviation	MCL (ug/L)
Tetrachloroethene	PCE	5
Trichloroethene	TCE	5
cis-1,2-Dichloroethene	1,2-DCE	70
Vinyl chloride	VC	2
1,1,2-Trichloroethane	1,1,2-TCA	5
1,2-Dichloroethane	1,2-DCA	5
1,1,1-Trichloroethane	1,1,1-TCA	200
1,1-Dichloroethene	1,1-DCE	7
1,1-Dichloroethane	1,1-DCA	-
Chloroethane	CA	-

CDM

Figure 4-5
Cross Section 1
Chlorinated Ethenes/Ethanes
Remedial Investigation Report
December 2007
PSC Site - Rock Hill, South Carolina



RIMW-11

1,2,4-TCB	*BDL*
1,2-DCB	*BDL*
1,4-DCB	*BDL*
CB	0.28
Total	0.28
B	*BDL*
T	*BDL*
E	*BDL*
X	*BDL*
Total	0

RIMW-18

1,2,4-TCB	*BDL*
1,2-DCB	*BDL*
1,4-DCB	*BDL*
CB	*BDL*
Total	0
B	*BDL*
T	0.21
E	*BDL*
X	*BDL*
Total	0.21

MW-123A

1,2,4-TCB	*BDL*
1,2-DCB	**2500**
1,4-DCB	**1300**
CB	**3000**
Total	6800
B	**16.25**
T	96
E	4
X	17.75
Total	134

RIMW-28

1,2,4-TCB	*BDL*
1,2-DCB	3.38
1,4-DCB	0.99
CB	14
Total	18.5
B	0.76
T	41
E	4.53
X	7.17
Total	53.5

RIMW-26

1,2,4-TCB	*BDL*
1,2-DCB	*BDL*
1,4-DCB	*BDL*
CB	*BDL*
Total	0
B	*BDL*
T	0.72
E	*BDL*
X	*BDL*
Total	1

MW-104

1,2,4-TCB	*BDL*
1,2-DCB	*BDL*
1,4-DCB	*BDL*
CB	*BDL*
Total	0
B	*BDL*
T	0.12
E	*BDL*
X	*BDL*
Total	0.12

RIMW-24

1,2,4-TCB	*BDL*
1,2-DCB	*BDL*
1,4-DCB	*BDL*
CB	*BDL*
Total	0
B	0.44
T	0.47
E	*BDL*
X	*BDL*
Total	1

RIMW-23

1,2,4-TCB	*BDL*
1,2-DCB	*BDL*
1,4-DCB	*BDL*
CB	*BDL*
Total	0
B	*BDL*
T	0.78
E	*BDL*
X	*BDL*
Total	1

MW-120A

1,2,4-TCB	*BDL*
1,2-DCB	*BDL*
1,4-DCB	*BDL*
CB	*BDL*
Total	0
B	*BDL*
T	*BDL*
E	*BDL*
X	*BDL*
Total	0

MW-120B

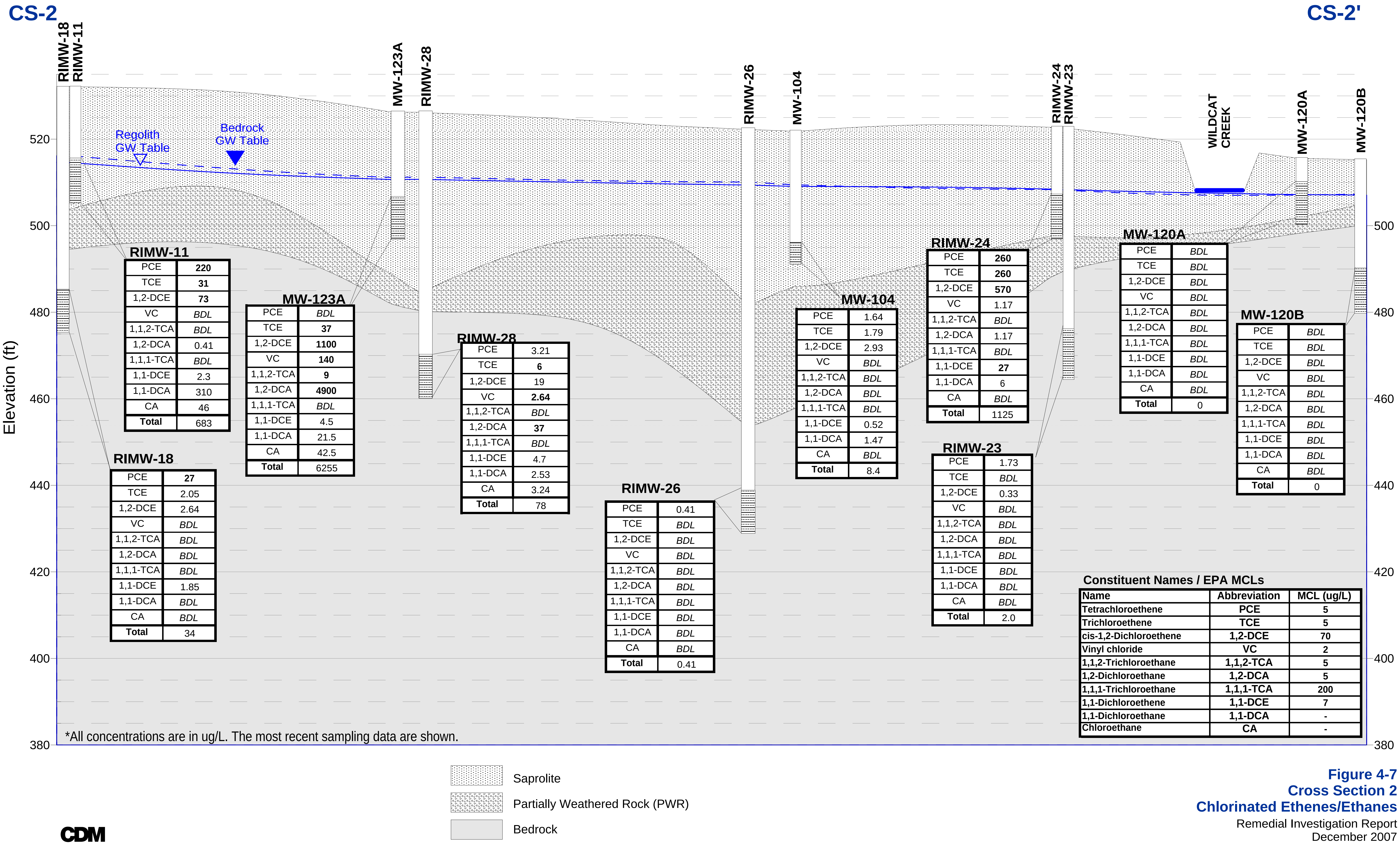
1,2,4-TCB	*BDL*
1,2-DCB	*BDL*
1,4-DCB	*BDL*
CB	*BDL*
Total	0
B	*BDL*
T	*BDL*
E	*BDL*
X	*BDL*
Total	0

Constituent Names / EPA MCLs

Name	Abbreviation	MCL (ug/L)
1,2,4-Trichlorobenzene	1,2,4-TCB	70
1,2-Dichlorobenzene	1,2-DCB	600
1,4-Dichlorobenzene	1,4-DCB	75
Chlorobenzene	CB	100
Benzene	B	5
Toluene	T	1000
Ethylbenzene	E	700
Xylenes (Total)	X	10000

Figure 4-6
Cross Section 2
BTEX / Chlorinated Benzenes

Remedial Investigation Report
December 2007
PSC Site - Rock Hill, South Carolina



RIMW-11

PCE	**220**
TCE	**31**
1,2-DCE	**73**
VC	*BDL*
1,1,2-TCA	*BDL*
1,2-DCA	0.41
1,1,1-TCA	*BDL*
1,1-DCE	2.3
1,1-DCA	310
CA	46
Total	683

MW-123A

PCE	*BDL*
TCE	**37**
1,2-DCE	**1100**
VC	**140**
1,1,2-TCA	**9**
1,2-DCA	**4900**
1,1,1-TCA	*BDL*
1,1-DCE	4.5
1,1-DCA	21.5
CA	42.5
Total	6255

RIMW-28

PCE	3.21
TCE	**6**
1,2-DCE	19
VC	**2.64**
1,1,2-TCA	*BDL*
1,2-DCA	**37**
1,1,1-TCA	*BDL*
1,1-DCE	4.7
1,1-DCA	2.53
CA	3.24
Total	78

RIMW-18

PCE	**27**
TCE	2.05
1,2-DCE	2.64
VC	*BDL*
1,1,2-TCA	*BDL*
1,2-DCA	*BDL*
1,1,1-TCA	*BDL*
1,1-DCE	1.85
1,1-DCA	*BDL*
CA	*BDL*
Total	34

RIMW-26

PCE	0.41
TCE	*BDL*
1,2-DCE	*BDL*
VC	*BDL*
1,1,2-TCA	*BDL*
1,2-DCA	*BDL*
1,1,1-TCA	*BDL*
1,1-DCE	*BDL*
1,1-DCA	*BDL*
CA	*BDL*
Total	0.41

MW-104

PCE	1.64
TCE	1.79
1,2-DCE	2.93
VC	*BDL*
1,1,2-TCA	*BDL*
1,2-DCA	*BDL*
1,1,1-TCA	*BDL*
1,1-DCE	0.52
1,1-DCA	1.47
CA	*BDL*
Total	8.4

RIMW-24

PCE	**260**
TCE	**260**
1,2-DCE	**570**
VC	1.17
1,1,2-TCA	*BDL*
1,2-DCA	1.17
1,1,1-TCA	*BDL*
1,1-DCE	**27**
1,1-DCA	6
CA	*BDL*
Total	1125

RIMW-23

PCE	1.73
TCE	*BDL*
1,2-DCE	0.33
VC	*BDL*
1,1,2-TCA	*BDL*
1,2-DCA	*BDL*
1,1,1-TCA	*BDL*
1,1-DCE	*BDL*
1,1-DCA	*BDL*
CA	*BDL*
Total	2.0

MW-120A

PCE	*BDL*
TCE	*BDL*
1,2-DCE	*BDL*
VC	*BDL*
1,1,2-TCA	*BDL*
1,2-DCA	*BDL*
1,1,1-TCA	*BDL*
1,1-DCE	*BDL*
1,1-DCA	*BDL*
CA	*BDL*
Total	0

MW-120B

PCE	*BDL*
TCE	*BDL*
1,2-DCE	*BDL*
VC	*BDL*
1,1,2-TCA	*BDL*
1,2-DCA	*BDL*
1,1,1-TCA	*BDL*
1,1-DCE	*BDL*
1,1-DCA	*BDL*
CA	*BDL*
Total	0

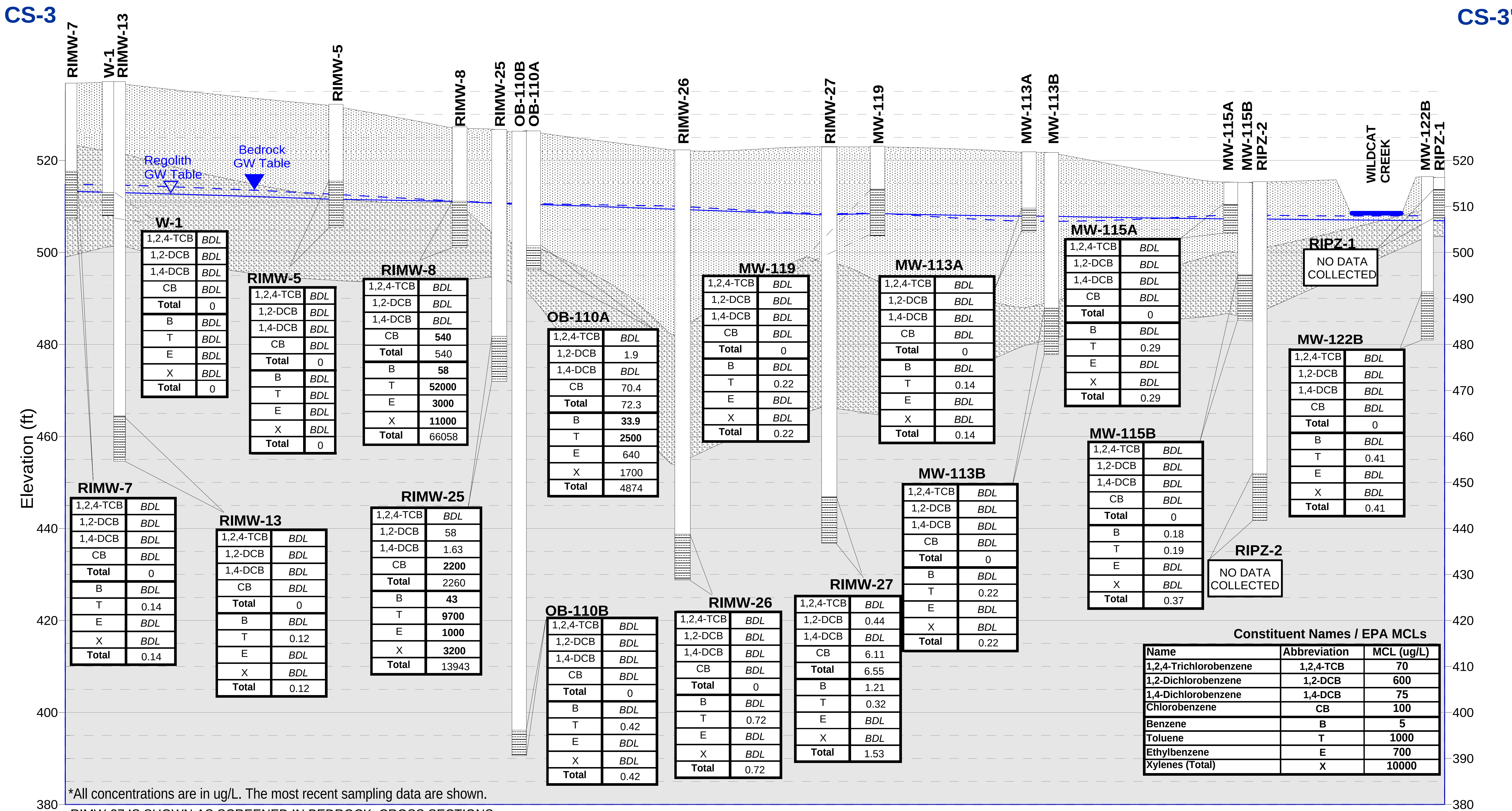
Constituent Names / EPA MCLs

Name	Abbreviation	MCL (ug/L)
Tetrachloroethene	PCE	5
Trichloroethene	TCE	5
cis-1,2-Dichloroethene	1,2-DCE	70
Vinyl chloride	VC	2
1,1,2-Trichloroethane	1,1,2-TCA	5
1,2-Dichloroethane	1,2-DCA	5
1,1,1-Trichloroethane	1,1,1-TCA	200
1,1-Dichloroethene	1,1-DCE	7
1,1-Dichloroethane	1,1-DCA	-
Chloroethane	CA	-

CDM

Figure 4-7
Cross Section 2
Chlorinated Ethenes/Ethanes

Remedial Investigation Report
December 2007
PSC Site - Rock Hill, South Carolina



W-1

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	BDL
T	BDL
E	BDL
X	BDL
Total	0

RIMW-5

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	BDL
T	BDL
E	BDL
X	BDL
Total	0

RIMW-8

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	**540**
Total	540
B	**58**
T	**52000**
E	**3000**
X	**11000**
Total	66058

OB-110A

1,2,4-TCB	BDL
1,2-DCB	1.9
1,4-DCB	BDL
CB	70.4
Total	72.3
B	**33.9**
T	**2500**
E	640
X	1700
Total	4874

MW-119

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	BDL
T	0.22
E	BDL
X	BDL
Total	0.22

MW-113A

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	BDL
T	0.14
E	BDL
X	BDL
Total	0.14

MW-115A

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	BDL
T	0.29
E	BDL
X	BDL
Total	0.29

MW-122B

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	BDL
T	0.41
E	BDL
X	BDL
Total	0.41

MW-115B

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	0.18
T	0.19
E	BDL
X	BDL
Total	0.37

MW-113B

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	BDL
T	0.22
E	BDL
X	BDL
Total	0.22

RIMW-7

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	BDL
T	0.14
E	BDL
X	BDL
Total	0.14

RIMW-13

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	BDL
T	0.12
E	BDL
X	BDL
Total	0.12

RIMW-25

1,2,4-TCB	BDL
1,2-DCB	58
1,4-DCB	1.63
CB	**2200**
Total	2260
B	**43**
T	**9700**
E	**1000**
X	**3200**
Total	13943

OB-110B

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	BDL
T	0.42
E	BDL
X	BDL
Total	0.42

RIMW-26

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	BDL
T	0.72
E	BDL
X	BDL
Total	0.72

RIMW-27

1,2,4-TCB	BDL
1,2-DCB	0.44
1,4-DCB	BDL
CB	6.11
Total	6.55
B	1.21
T	0.32
E	BDL
X	BDL
Total	1.53

Constituent Names / EPA MCLs

Name	Abbreviation	MCL (ug/L)
1,2,4-Trichlorobenzene	1,2,4-TCB	70
1,2-Dichlorobenzene	1,2-DCB	600
1,4-Dichlorobenzene	1,4-DCB	75
Chlorobenzene	CB	100
Benzene	B	5
Toluene	T	1000
Ethylbenzene	E	700
Xylenes (Total)	X	10000

*All concentrations are in ug/L. The most recent sampling data are shown.

RIMW-27 IS SHOWN AS SCREENED IN BEDROCK. CROSS SECTIONS ARE CURRENTLY BEING RE-DEVELOPED BECAUSE RIMW-27 IS SCREENED ABOVE BEDROCK.

Saprolite

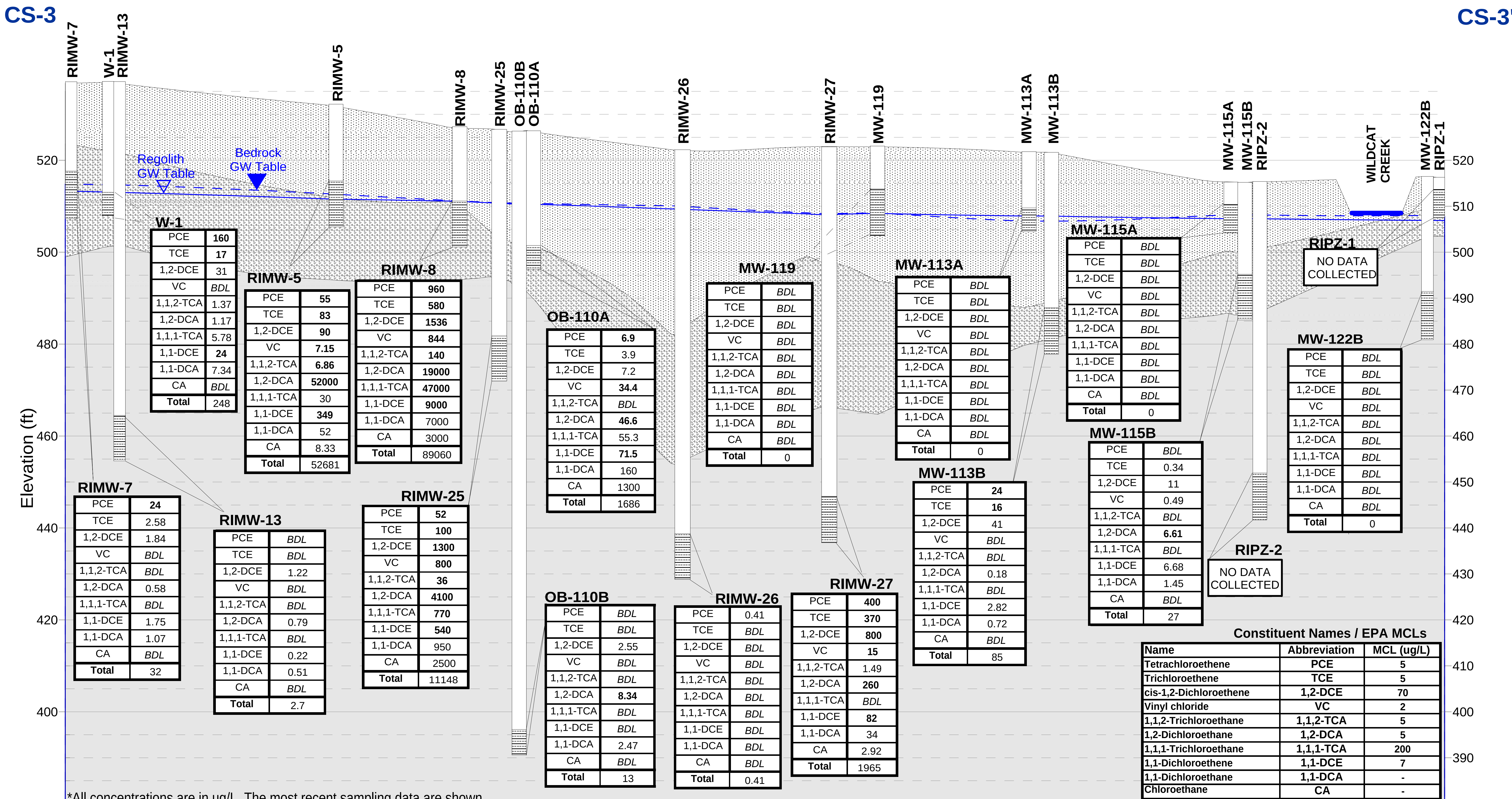
Partially Weathered Rock (PWR)

Bedrock

CDM

Figure 4-8
Cross Section 3
BTEX / Chlorinated Benzenes

Remedial Investigation Report
December 2007
PSC Site - Rock Hill, South Carolina



W-1

PCE	160
TCE	17
1,2-DCE	31
VC	BDL
1,1,2-TCA	1.37
1,2-DCA	1.17
1,1,1-TCA	5.78
1,1-DCE	24
1,1-DCA	7.34
CA	BDL
Total	248

RIMW-5

PCE	55
TCE	83
1,2-DCE	90
VC	7.15
1,1,2-TCA	6.86
1,2-DCA	52000
1,1,1-TCA	30
1,1-DCE	349
1,1-DCA	52
CA	8.33
Total	52681

RIMW-8

PCE	960
TCE	580
1,2-DCE	1536
VC	844
1,1,2-TCA	140
1,2-DCA	19000
1,1,1-TCA	47000
1,1-DCE	9000
1,1-DCA	7000
CA	3000
Total	89060

OB-110A

PCE	6.9
TCE	3.9
1,2-DCE	7.2
VC	34.4
1,1,2-TCA	BDL
1,2-DCA	46.6
1,1,1-TCA	55.3
1,1-DCE	71.5
1,1-DCA	160
CA	1300
Total	1686

MW-119

PCE	BDL
TCE	BDL
1,2-DCE	BDL
VC	BDL
1,1,2-TCA	BDL
1,2-DCA	BDL
1,1,1-TCA	BDL
1,1-DCE	BDL
1,1-DCA	BDL
CA	BDL
Total	0

MW-113A

PCE	BDL
TCE	BDL
1,2-DCE	BDL
VC	BDL
1,1,2-TCA	BDL
1,2-DCA	BDL
1,1,1-TCA	BDL
1,1-DCE	BDL
1,1-DCA	BDL
CA	BDL
Total	0

MW-115A

PCE	BDL
TCE	BDL
1,2-DCE	BDL
VC	BDL
1,1,2-TCA	BDL
1,2-DCA	BDL
1,1,1-TCA	BDL
1,1-DCE	BDL
1,1-DCA	BDL
CA	BDL
Total	0

RIPZ-1

NO DATA COLLECTED

MW-122B

PCE	BDL
TCE	BDL
1,2-DCE	BDL
VC	BDL
1,1,2-TCA	BDL
1,2-DCA	BDL
1,1,1-TCA	BDL
1,1-DCE	BDL
1,1-DCA	BDL
CA	BDL
Total	0

RIMW-7

PCE	24
TCE	2.58
1,2-DCE	1.84
VC	BDL
1,1,2-TCA	BDL
1,2-DCA	0.58
1,1,1-TCA	BDL
1,1-DCE	1.75
1,1-DCA	1.07
CA	BDL
Total	32

RIMW-13

PCE	BDL
TCE	BDL
1,2-DCE	1.22
VC	BDL
1,1,2-TCA	BDL
1,2-DCA	0.79
1,1,1-TCA	BDL
1,1-DCE	0.22
1,1-DCA	0.51
CA	BDL
Total	2.7

RIMW-25

PCE	52
TCE	100
1,2-DCE	1300
VC	800
1,1,2-TCA	36
1,2-DCA	4100
1,1,1-TCA	770
1,1-DCE	540
1,1-DCA	950
CA	2500
Total	11148

OB-110B

PCE	BDL
TCE	BDL
1,2-DCE	2.55
VC	BDL
1,1,2-TCA	BDL
1,2-DCA	8.34
1,1,1-TCA	BDL
1,1-DCE	BDL
1,1-DCA	2.47
CA	BDL
Total	13

RIMW-26

PCE	0.41
TCE	BDL
1,2-DCE	BDL
VC	BDL
1,1,2-TCA	BDL
1,2-DCA	BDL
1,1,1-TCA	BDL
1,1-DCE	BDL
1,1-DCA	BDL
CA	BDL
Total	0.41

RIMW-27

PCE	400
TCE	370
1,2-DCE	800
VC	15
1,1,2-TCA	1.49
1,2-DCA	260
1,1,1-TCA	BDL
1,1-DCE	82
1,1-DCA	34
CA	2.92
Total	1965

MW-113B

PCE	24
TCE	16
1,2-DCE	41
VC	BDL
1,1,2-TCA	BDL
1,2-DCA	0.18
1,1,1-TCA	BDL
1,1-DCE	2.82
1,1-DCA	0.72
CA	BDL
Total	85

MW-115B

PCE	BDL
TCE	0.34
1,2-DCE	11
VC	0.49
1,1,2-TCA	BDL
1,2-DCA	6.61
1,1,1-TCA	BDL
1,1-DCE	6.68
1,1-DCA	1.45
CA	BDL
Total	27

RIPZ-2

NO DATA COLLECTED

Constituent Names / EPA MCLs

Name	Abbreviation	MCL (ug/L)
Tetrachloroethene	PCE	5
Trichloroethene	TCE	5
cis-1,2-Dichloroethene	1,2-DCE	70
Vinyl chloride	VC	2
1,1,2-Trichloroethane	1,1,2-TCA	5
1,2-Dichloroethane	1,2-DCA	5
1,1,1-Trichloroethane	1,1,1-TCA	200
1,1-Dichloroethene	1,1-DCE	7
1,1-Dichloroethane	1,1-DCA	-
Chloroethane	CA	-

*All concentrations are in ug/L. The most recent sampling data are shown.

RIMW-27 IS SHOWN AS SCREENED IN BEDROCK. CROSS SECTIONS ARE CURRENTLY BEING RE-DEVELOPED BECAUSE RIMW-27 IS SCREENED ABOVE BEDROCK.

Saprolite

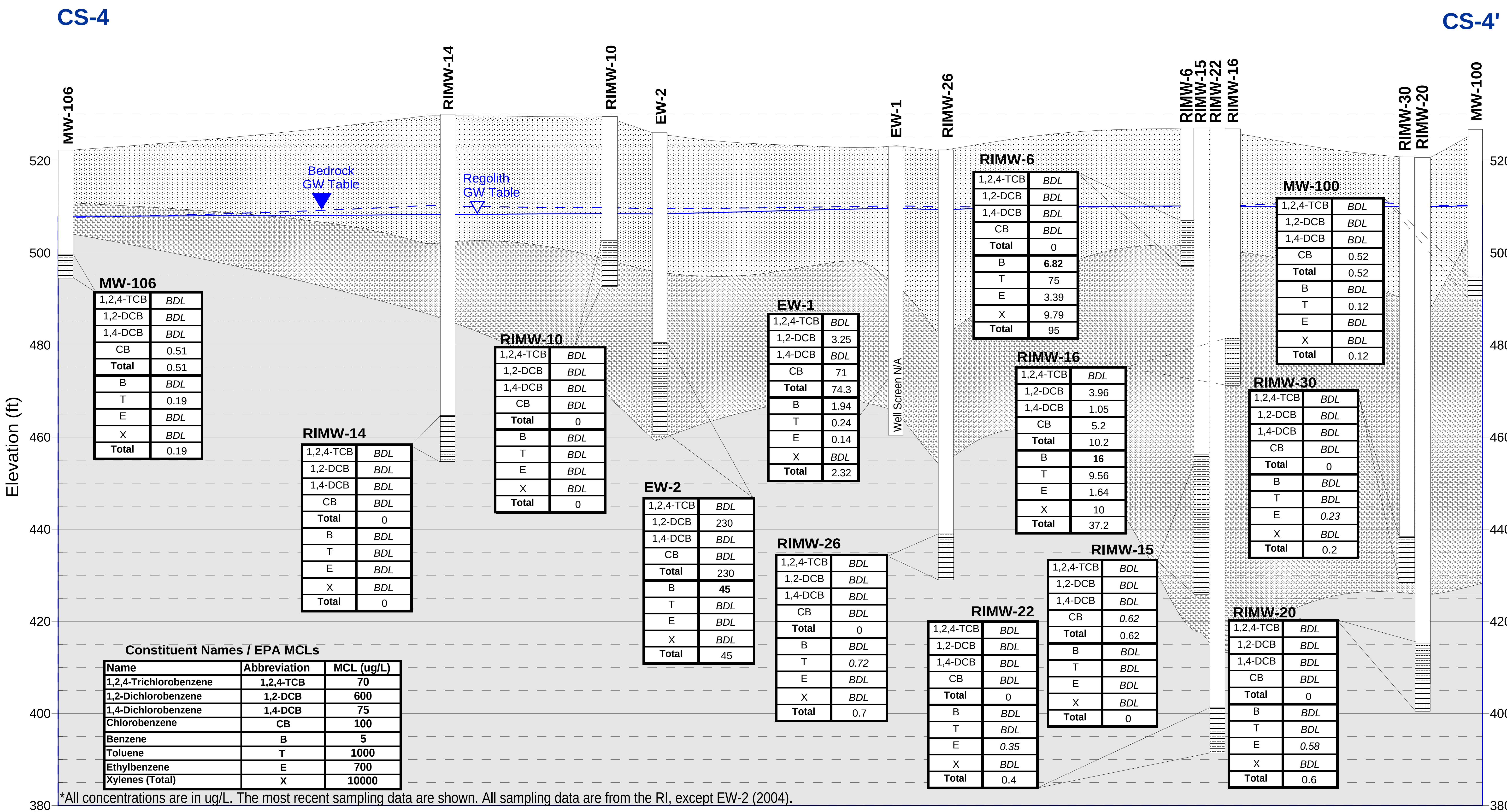
Partially Weathered Rock (PWR)

Bedrock

CDM

Figure 4-9
Cross Section 3
Chlorinated Ethenes/Ethanes

Remedial Investigation Report
December 2007
PSC Site - Rock Hill, South Carolina



Constituent Names / EPA MCLs

Name	Abbreviation	MCL (ug/L)
1,2,4-Trichlorobenzene	1,2,4-TCB	70
1,2-Dichlorobenzene	1,2-DCB	600
1,4-Dichlorobenzene	1,4-DCB	75
Chlorobenzene	CB	100
Benzene	B	5
Toluene	T	1000
Ethylbenzene	E	700
Xylenes (Total)	X	10000

*All concentrations are in ug/L. The most recent sampling data are shown. All sampling data are from the RI, except EW-2 (2004).

Saprolite

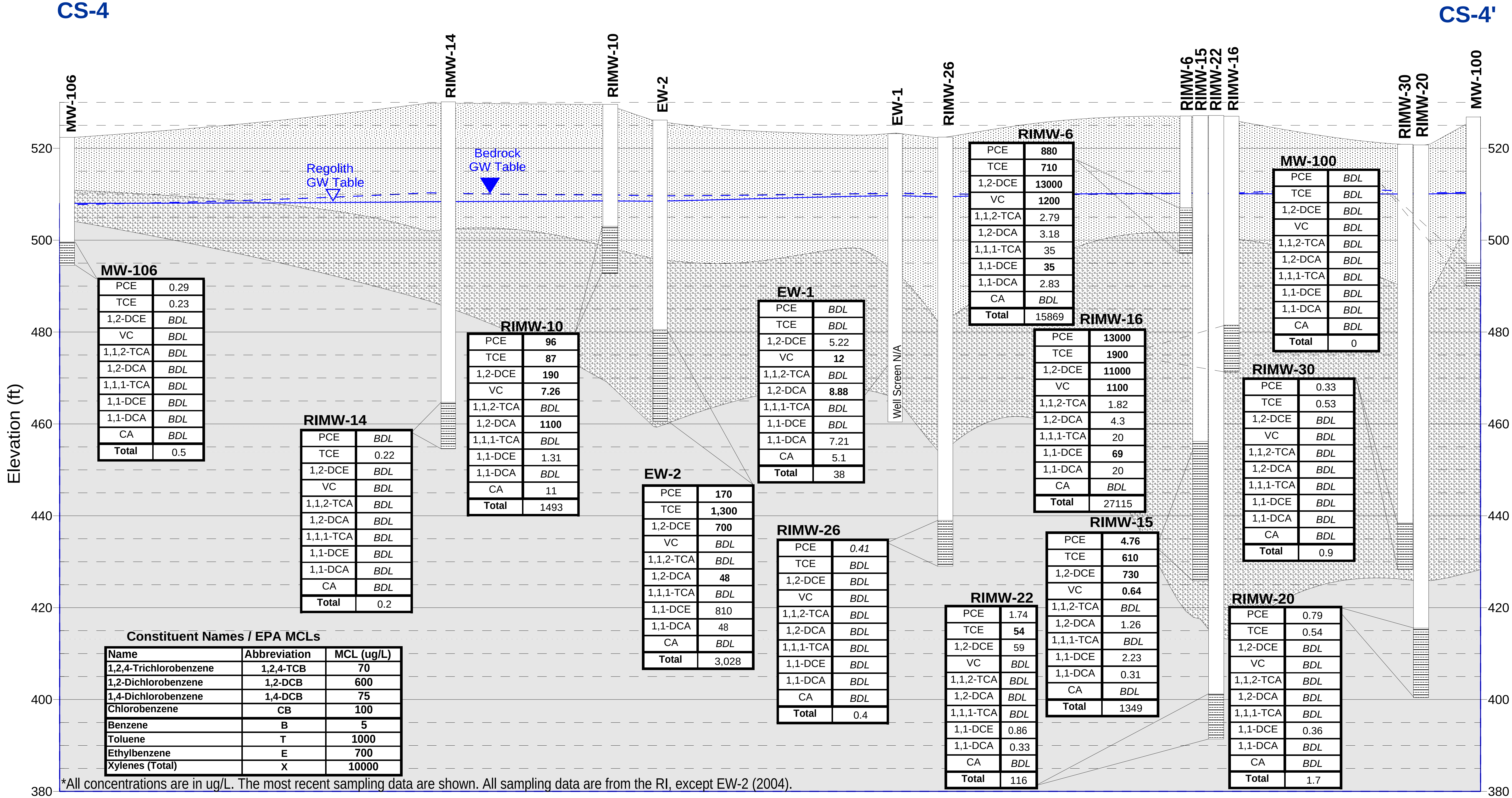
Partially Weathered Rock (PWR)

Bedrock

CDM

Figure 4-10
Cross Section 4
BTEX / Chlorinated Benzenes

Remedial Investigation Report
December 2007
PSC Site - Rock Hill, South Carolina



	MW-106	RIMW-14	RIMW-10	EW-2	EW-1	RIMW-26	RIMW-6	RIMW-16	RIMW-15	RIMW-22	MW-100	RIMW-30	RIMW-20
PCE	0.29	BDL	96	170	BDL	0.41	880	13000	4.76	1.74	BDL	0.33	0.79
TCE	0.23	0.22	87	1,300	BDL	BDL	710	1900	610	54	BDL	0.53	0.54
1,2-DCE	BDL	BDL	190	700	5.22	BDL	13000	11000	730	59	BDL	BDL	BDL
VC	BDL	BDL	7.26	BDL	12	BDL	1200	1100	0.64	BDL	BDL	BDL	BDL
1,1,2-TCA	BDL	BDL	BDL	BDL	BDL	BDL	2.79	1.82	BDL	BDL	BDL	BDL	BDL
1,2-DCA	BDL	BDL	1100	48	8.88	BDL	3.18	4.3	1.26	BDL	BDL	BDL	BDL
1,1,1-TCA	BDL	BDL	BDL	BDL	BDL	BDL	35	20	BDL	BDL	BDL	BDL	BDL
1,1-DCE	BDL	BDL	1.31	810	BDL	BDL	35	69	2.23	0.86	BDL	BDL	0.36
1,1-DCA	BDL	BDL	BDL	48	7.21	BDL	2.83	20	0.31	0.33	BDL	BDL	BDL
CA	BDL	BDL	11	BDL	5.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Total	0.5	0.2	1493	3,028	38	0.4	15869	27115	1349	116	0	0.9	1.7

Constituent Names / EPA MCLs

Name	Abbreviation	MCL (ug/L)
1,2,4-Trichlorobenzene	1,2,4-TCB	70
1,2-Dichlorobenzene	1,2-DCB	600
1,4-Dichlorobenzene	1,4-DCB	75
Chlorobenzene	CB	100
Benzene	B	5
Toluene	T	1000
Ethylbenzene	E	700
Xylenes (Total)	X	10000

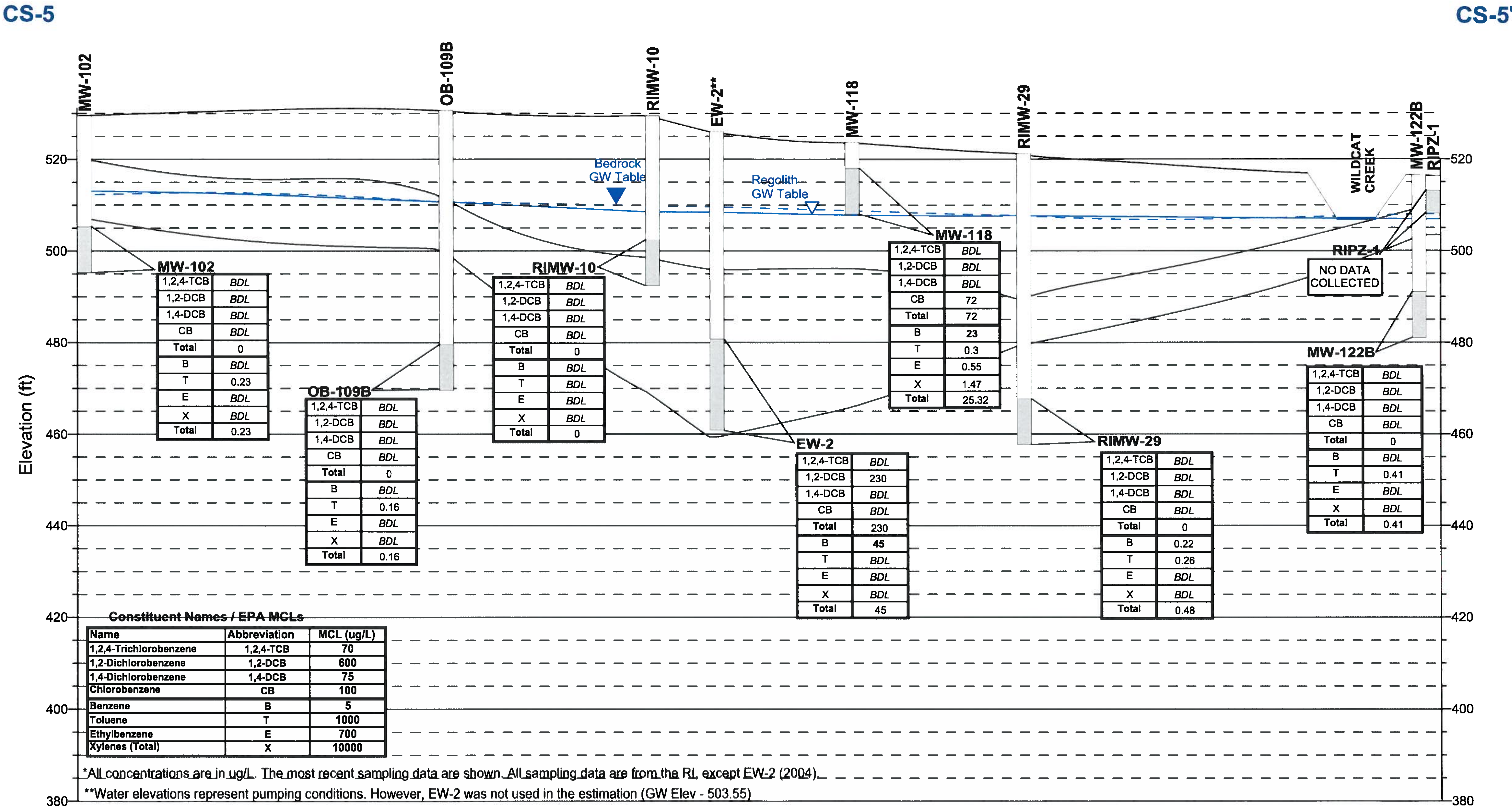
*All concentrations are in ug/L. The most recent sampling data are shown. All sampling data are from the RI, except EW-2 (2004).

Saprolite
Partially Weathered Rock (PWR)
Bedrock

CDM

Figure 4-11
Cross Section 4
Chlorinated Ethenes/Ethanes

Remedial Investigation Report
December 2007
PSC Site - Rock Hill, South Carolina



MW-102

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	BDL
T	0.23
E	BDL
X	BDL
Total	0.23

OB-109B

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	BDL
T	0.16
E	BDL
X	BDL
Total	0.16

RIMW-10

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	BDL
T	BDL
E	BDL
X	BDL
Total	0

EW-2

1,2,4-TCB	BDL
1,2-DCB	230
1,4-DCB	BDL
CB	BDL
Total	230
B	45
T	BDL
E	BDL
X	BDL
Total	45

MW-118

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	72
Total	72
B	23
T	0.3
E	0.55
X	1.47
Total	25.32

RIMW-29

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	0.22
T	0.26
E	BDL
X	BDL
Total	0.48

MW-122B

1,2,4-TCB	BDL
1,2-DCB	BDL
1,4-DCB	BDL
CB	BDL
Total	0
B	BDL
T	0.41
E	BDL
X	BDL
Total	0.41

Constituent Names / EPA MCLs

Name	Abbreviation	MCL (ug/L)
1,2,4-Trichlorobenzene	1,2,4-TCB	70
1,2-Dichlorobenzene	1,2-DCB	600
1,4-Dichlorobenzene	1,4-DCB	75
Chlorobenzene	CB	100
Benzene	B	5
Toluene	T	1000
Ethylbenzene	E	700
Xylenes (Total)	X	10000

*All concentrations are in ug/L. The most recent sampling data are shown. All sampling data are from the RI, except EW-2 (2004).

**Water elevations represent pumping conditions. However, EW-2 was not used in the estimation (GW Elev - 503.55)

Saprolite

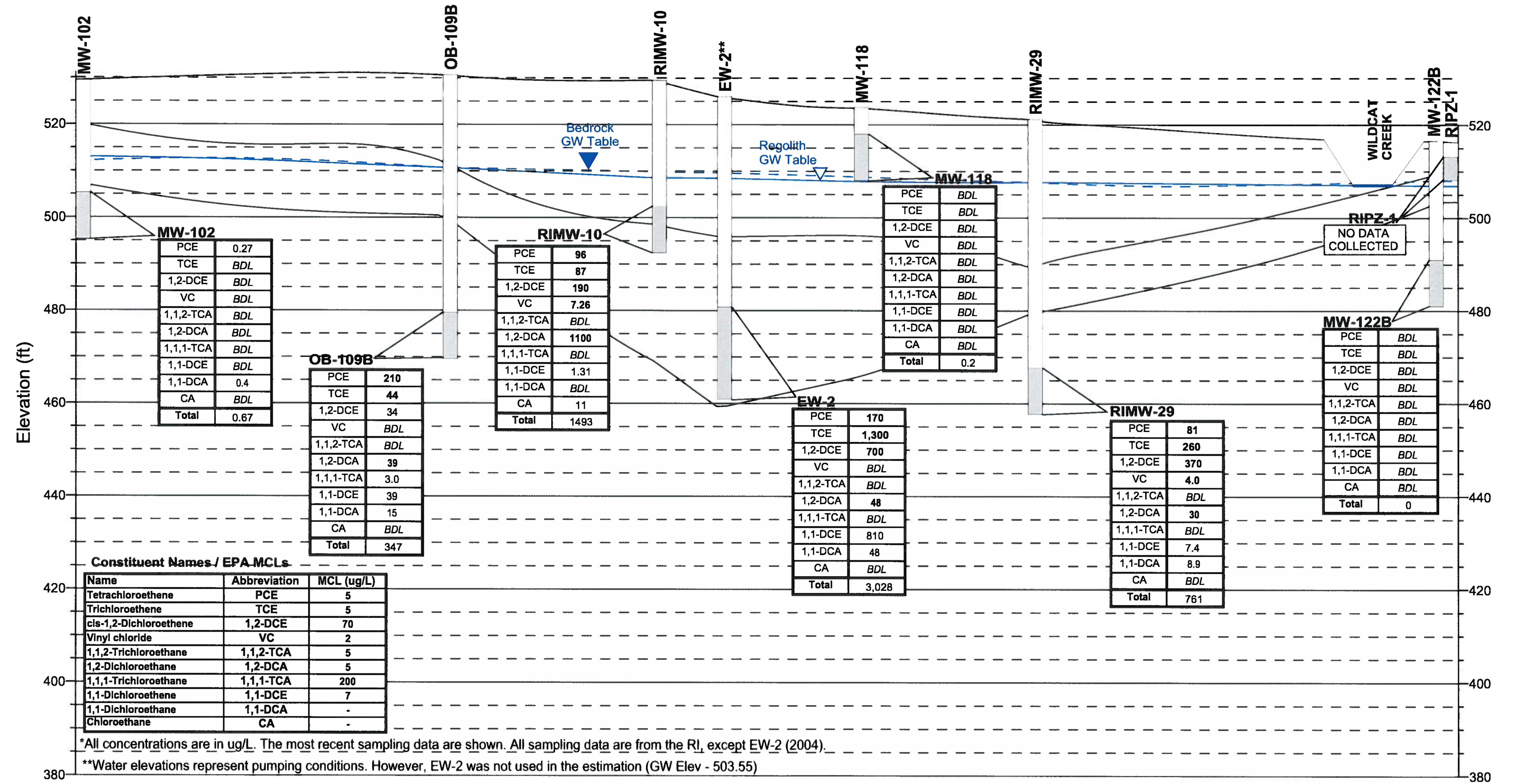
Partially Weathered Rock (PWR)

Bedrock

CDM

Figure 4-12
Cross Section 5
BTEX / Chlorinated Benzenes

Remedial Investigation Report
September 2008
PSC Site - Rock Hill, South Carolina



MW-102

PCE	0.27
TCE	*BDL*
1,2-DCE	*BDL*
VC	*BDL*
1,1,2-TCA	*BDL*
1,2-DCA	*BDL*
1,1,1-TCA	*BDL*
1,1-DCE	*BDL*
1,1-DCA	0.4
CA	*BDL*
Total	0.67

OB-109B

PCE	**210**
TCE	**44**
1,2-DCE	34
VC	*BDL*
1,1,2-TCA	*BDL*
1,2-DCA	**39**
1,1,1-TCA	3.0
1,1-DCE	**39**
1,1-DCA	15
CA	*BDL*
Total	347

RIMW-10

PCE	**96**
TCE	**87**
1,2-DCE	**190**
VC	**7.26**
1,1,2-TCA	*BDL*
1,2-DCA	**1100**
1,1,1-TCA	*BDL*
1,1-DCE	1.31
1,1-DCA	*BDL*
CA	11
Total	1493

EW-2

PCE	**170**
TCE	**1,300**
1,2-DCE	**700**
VC	*BDL*
1,1,2-TCA	*BDL*
1,2-DCA	**48**
1,1,1-TCA	*BDL*
1,1-DCE	810
1,1-DCA	48
CA	*BDL*
Total	3,028

MW-118

PCE	*BDL*
TCE	*BDL*
1,2-DCE	*BDL*
VC	*BDL*
1,1,2-TCA	*BDL*
1,2-DCA	*BDL*
1,1,1-TCA	*BDL*
1,1-DCE	*BDL*
1,1-DCA	*BDL*
CA	*BDL*
Total	0.2

RIMW-29

PCE	**81**
TCE	**260**
1,2-DCE	**370**
VC	**4.0**
1,1,2-TCA	*BDL*
1,2-DCA	**30**
1,1,1-TCA	*BDL*
1,1-DCE	7.4
1,1-DCA	8.9
CA	*BDL*
Total	761

MW-122B

PCE	*BDL*
TCE	*BDL*
1,2-DCE	*BDL*
VC	*BDL*
1,1,2-TCA	*BDL*
1,2-DCA	*BDL*
1,1,1-TCA	*BDL*
1,1-DCE	*BDL*
1,1-DCA	*BDL*
CA	*BDL*
Total	0

Constituent Names / EPA MCLs

Name	Abbreviation	MCL (ug/L)
Tetrachloroethene	PCE	5
Trichloroethene	TCE	5
cis-1,2-Dichloroethene	1,2-DCE	70
Vinyl chloride	VC	2
1,1,2-Trichloroethane	1,1,2-TCA	5
1,2-Dichloroethane	1,2-DCA	5
1,1,1-Trichloroethane	1,1,1-TCA	200
1,1-Dichloroethene	1,1-DCE	7
1,1-Dichloroethane	1,1-DCA	-
Chloroethane	CA	-

*All concentrations are in ug/L. The most recent sampling data are shown. All sampling data are from the RI, except EW-2 (2004).

**Water elevations represent pumping conditions. However, EW-2 was not used in the estimation (GW Elev - 503.55)

Saprolite

Partially Weathered Rock (PWR)

Bedrock

CDM

Figure 4-13
Cross Section 5
Chlorinated Ethenes/Ethanes
Remedial Investigation Report
September 2008
PSC Site - Rock Hill, South Carolina